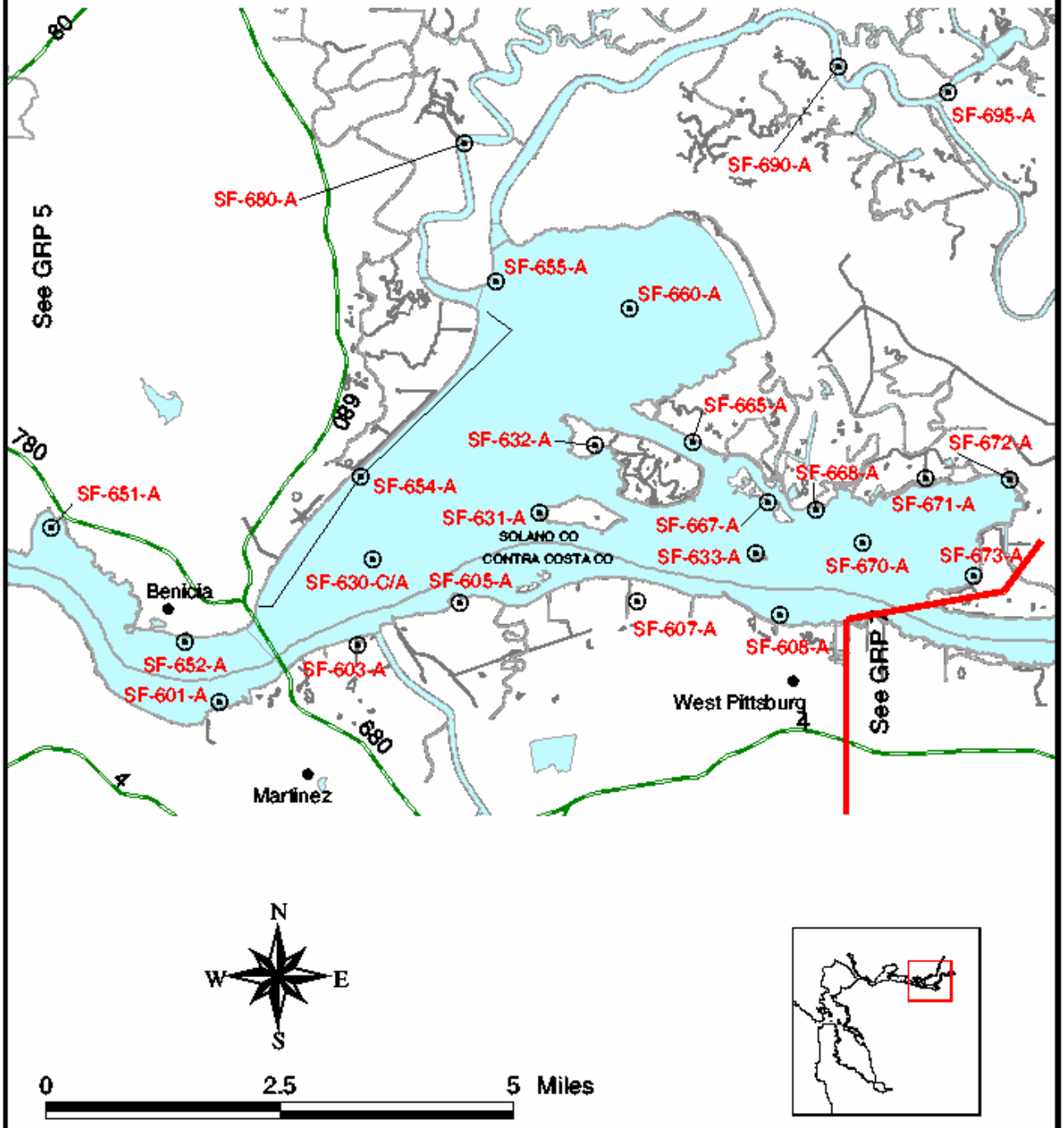
SF Geographic Response Area 6
Carquinez Strait/Suisun Bay
Environmentally Sensitive Sites



Note: Marker symbols (⊙) are only site reference and do not indicate full extent of sites.

Section 9846 – GRA 6 Suisun Bay

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GRA 6 Site Index/Response Actions

Site ID	Priority	Site Name	Assignment	Date/Time Required	Date/Time Completed
2-601		Martinez Marsh and Shell Dock Marsh			
2-603		Bulls Head Marsh and Pacheco Creek			
2-605		Hastings Slough & Pt Edith Marshes			
2-607		Weapons Station Marshes & Seal Isl			
2-608		Shore Acres Marsh			
2-630		Suisun Shoal			
2-631		Roe Island			
2-632		Ryer Island			
2-633		Middle Ground Island			
2-651		Southampton Bay			
2-652		Benicia Marsh			
2-654		Goodyear Marsh			
2-655		Joice Island, Suisun Slough, and Montezuma Slough			
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2-690		Suisun Marsh Central: Grizzly Isl			
2-695		Suisun Marsh North: Denverton / Nurse Slough Drainage			

Summary of GRA 6 Suisun Bay Response Resources by Site and Sub-Strategy

Site *Site Name*

sub-strategy **PREVENTION OBJECTIVE OR CONDITION FOR DEPLOYMENT**

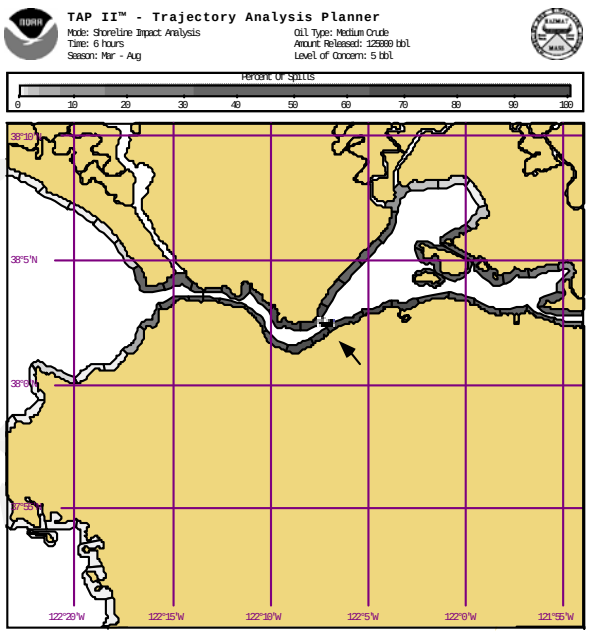
Harbor Boom	Swamp boom	Other boom/TYPE	Sorbant boom	Anchoring No	Anchoring type of gear	Boom boat	Skiff	Skimmer No	Skimmer Type	Special Equipment No	Special Equipment and kinds	(and notes)	deploy staff	Staff to tend
2-601	***Martinez Marsh***													
.1 -	**Primary: on the flood tide, exclusion booming mouth Alhambra Creek, other tidal channels, and protect nearby shoreline**													
0	250		1300	1	1/12#+/ anchor & stakes	0	1					boat capable of shallow grounding	2	
.2 -	**Deflection for the ebb tide, deflect oil away from and past Alhambra Creek & marsh with boom from old ferry slip**													
600				1	1/22+/danforth + 20' chain	1	0						3	
.3 -	**Deflection for the Flood Tide: deflect away from Martinez shore**													
2000				4	4/22+/danforths	3	1						11	
.4 -	**Protection Shoreline Booming: If there is threat of heavy oiling and saturation of the marsh front, deploy protective boom**													
0	8500			9	9/12/danforths & stakes	3	3					bboats - very shallow, strandable.	15	
2-603	***Bulls Head marsh and Pacheco Creek***													
.1 -	**Exclude oil from entering Pacheco Creek, Peyton Slough and four other tidal channels on flood currents Rv 011305**													
1100	400		1000	19	4/22+ & 5/12+/danforths + chai	1	2					bboat: strandable, shallow water, stakes	7	
.2 -	**For flood tides, deflect oil to collection site in Pacheco Creek on Avon refinery shoreline to prevent oil spread to other mar**													
1700	2500		300	5	5/22+/danforth + chain	2	2	1	SSS			stakes, bboat: strandable, shallow water	8	
.3 -	**Marsh front protective booming: If there is threat of heavy oiling and saturation of the marsh front, and when such use wil**													
9000				14		3	1						11	
.4 -	**Collection/ containment of upstream threats: If oil is moving down Pacheco Slough from an inland spill, deploy a containm**													
0	1600			6	6/12+ and stakes		1	1	SSS				3	
.5 -	**Back-up for .1 exclusion in case of over-wash threat**													
0	1400	0	0	0		0	0	0		0				
2-605	***Hastings Slough & Point Edith Marshes***													
.1 -	**Exclude oil from Hastings Slough and tidal channels to prevent oil from being carried into marsh on flood tides. Revised 0**													
1500	1100		2300	38	5/22+ & 11/12+ danforth, 22 st	2	6					bboat: shallow, strandable. Stakes	18	
.2 -	**Deflect oil away from shoreline for sites 2-605 and 2-607 on flood tide.**													
2400				6	5/22+/danforths + 20'chain	3	0						9	
.3 -	**Back-up of Exclusion booming of .1 strategy for wave conditions: if waves or chop is likely to wash oil over boom.**													
0	2300	1000	0	5	12+/danforths	0	0	0		0				
.4 -	**Marsh front protective booming: If there is threat of heavy oiling and saturation of the marsh front, and when such deploy**													
7000				10	10/22+/danforths	4	2					bboats: very shallow, groundable.	14	
2-607	***Weapons Station Marshes & Seal Islands***													
.1 -	**Exclusion booming of four Sloughs.**													
	1150		900	14	4/12+/danforth & 10 stakes	0	1						2	
.2 -	**diversion booming on Flood tide: Execute 2-605.2 divert out of channel and away from sites 2-605 & 2-607**													
0	0	0	0	0		0	0	0		0				
.3 -	**Exclusion of Sloughs by sediment dike.**													
0	0	0	0	0		0	0	0		2	skiploader & dump truck			
2-608	***Shore Acres Marsh***													
.1 -	**Exclude oil from small tidal channels which admit oil to back marsh. Close dead-end sloughs to reduce oil margin impacts**													
0	500		500	10	10/3/danforths & stakes	1	1						3	
.2 -	**Deflect oil away from shoreline and into main channel. Deflect any by-passing oil to shore capture/collection.**													
3000				18	18/22#+ danforths + 15' chains	3	2	1	SSS				11	
.3 -	**Marsh front protective booming: If there is threat of heavy oiling and saturation of the marsh front, and when usch use wil**													
8000				10	10/22+/danforths & stakes	4	2						16	
2-630	***Suisun Shoal***													
.1 -	**Haze birds off exposed bar: Only at direction of Wildlife Branch Chief**													
0							1					4 hazinf devicies on flosting platforms	2	
2-631	***Roe Island***													
.1 -	**Exclude oil from entering tidal channels and penetrating interior of island.**													
	600		300	6	3/12#+/danforths & stakes	0	1					very shallow boat, draft airboat or hovercraft &	2	
.2 -	**Deflect booming at west end of island.**													
3000				7	7/75+/danforth + 20 heavy chai	3	1						9	
2-632	***Ryer Island***													
.1 -	**Exclude oil from entering east section of Island though levee breaks and penetrating the west section interior via tidal inle**													
2200	1700		3000	30	15/22#+& 15/5#+/danforth, 80	4	3					1 very shallow draft boats & 18 flags	18	
.2 -	**Deflect oil away from seal haulout at northwest tip.**													
400				4	4/22+/danforhts + 20'+ chain								3	
.3 -	**Reducing south shore impacts by closing barrow channel inlets.**													
0	3000			5	5/12+/ anchors + 40 stakes	1	1					boats - very shallow draft	4	
2-633	***Middle Ground Island***													

Site	Site Name													
sub-strategy	PREVENTION OBJECTIVE OR CONDITION FOR DEPLOYMENT													
	Harbor Boom	Swamp boom	Other boom/TYPE	Sorbant boom	Anchoring No	type of gear	Boom boat	Skiff	Skimmer No	Type	Special Equipment No	and kinds	(and notes)	deploy staff	Staff to tend
.1	-	**Flood tide deflection if oil threatens from SW: only when other larger sites are assured protection**													
	1500				4	4/22#+ danforths & chain	2	1						8	
.2	-	**Flood tide deflection if oil threatens from NW: only when other larger sites are assured protection**													
	0	1500			4	4/12+/danforhs & stakes	1	2						7	
2-651		***Southhampton Bay***													
.1	-	**On Flood tide, deflect boom past the site on the current contour line.**													
	1200				3	3/22+/danforths + chain	2							6	
.2	-	**Protective booming of marshy exposure. The main focus of protection should be the inner marsh.**													
	0	5000		3000	6	6/22+/danforhts + chain & stak	3	2					Bboats: very shallow draft	13	
.3	-	**Shoreline containment and recovery with shoreside skimming**													
	300				2	2/22+/danforth + chain	1	1	1	SSS				4	
2-652		***Benicia Marsh***													
.1	-	**Exclusion boom tidal inlets.**													
	0	150		150		20 stakes								2	
.2	-	**Protective booming of entire marsh front: When heavy or continuous re-oiling is emminant and deployment will not preem**													
	0	5000		1000	8	8/22+/danforths & stakes	2	1					Bboat: very shallow draft	8	
2-654		***Goodyear Marsh***													
.1	-	**Exclude oil from all tidal sloughs, inlets, and Sulfur Springs Creek to keep oil out of back marsh.**													
	0	1000			3	3/5#+ anchor and stakes		1					one airboat/hovercraft/shallow boat	2	
.2	-	**Deflect to collection: When heavy oiling/reoiling is a threat on incoming tide with a southerly wind, intercept along shore o**													
	1000	1400		100	4	4/22+/danforths + chain & stak	2	2	2	SSS/SP			Bboats: very shallow draft	8	
.3	-	**Protection booming if oil continues to threaten marshfront, deploy protective booming as recommended in SF Inlet Study**													
	0	27000			20	20/12+/danforth & stakes	8	2					Bboats: very shallow draft	28	
2-655		***Joice Island, Suisun Slough, and Montezuma Slough***													
.1	-	**Exclude from minor and major sloughs: deflect to collection Suisun and Montezuma Slough mouths and chevron exclusio**													
	3700	800			9	9/22+/danforths + chain	6	2	2	SFS or				14	
.3	-	**Protective booming of undiked tip of Joice Island**													
	9000				15	15/22+/danfroths + chain	10	2						30	
2-660		***Grizzly Bay***													
.1	-	**Protective booming of northeast prograding marsh**													
	13000				26	26/22+/danforth + chain	12	2						40	
.2	-	**Deflection at Pt. Buckler. Keep oil in the Suisun Cut channel and imped it from moving across Grizzly Bay.**													
	300	0	0	0	2	22#+/danforth & chain	1	0	0		0		shallow draft boom boat - grounding capable	3	
2-665		***Simmons Island***													
.1	-	**Collection/Exclusion of heavy oil flow though Suisun Cutoff, divert the oil to shore collection areas.**													
	4000				15	22#+ danforth & CHAIN	4	2	2	SSS			3500' of line	16	
.2	-	**Exclude oil from entering barrow channels and slough entrances.**													
	1100	1550			16	16/22+/danforth + chanin	2	4					very sallow craft, airboat, hovercraft etc.	15	
.3	-	**Protective Booming: If there is threat of heavy oiling and saturation of the marsh front, deploy protective boom coverage,**													
	10000	15000			15	anchors and stakes	10	6					2 hovercraft/airboat; 4 very shallow Bboat	44	
2-667		***Freeman & Snag Islands***													
.1	-	**Exclude oil from entering openings to perimeter barrow channel and interior channels of Freeman Island.**													
	1200	250			8	8/12+/danforths & stakes	1	2						7	
.2	-	**divert oil threat from west (Suisun Cut) past windward pockets to minimize shore oiling for Freeman**													
	1300				6	6/22+/danforths & stakes	2							6	
.3	-	**Deflection for S & SW winds, divert oil past windward pockets to minimize shore oiling for Freeman and Snag Island.**													
	2600	0	0	0	9	22+/danforths	3	0	0		0			9	
.4	-	**Protective Booming: If there is threat of heavy oiling and saturation of the marsh front, deploy protective boom coverage,**													
	4000	13000			18	18/22+/danforth & stakes	5	3						21	
2-668		***Dutton Island***													
.1	-	**Exclude oil from entering barrow channels and slough entrances.**													
	0	2500												12	
.2	-	**Exclude by Diversion to Collect at shore line: If heavy oil is threatening Honker Bay and shorelines**													
	1500				7	22#+ danforths & heavy chain	2	1	1	SSS			extra line for scope	8	
.3	-	**Portective booming of shoreline: When prevailing wind and oil threatens to overwhelm these measures, exclusion boom t**													
	0	6000			6	6/22+/danforths & stakes	6	3					hovercraft/airboat; very shallow draft Bboats	18	
2-670		***Honker Bay***													
.1	-	**Skimming to intercept oil approaching the bay with towed skimming arrays.**													
	800	700					4	0	2	towed ski				15	
.2	-	**diversion to collection if heavy oil is approaching the shore, divert the oil to collection areas.**													
	1300				2	3/22+/danforht + chain and sta	3	2						11	

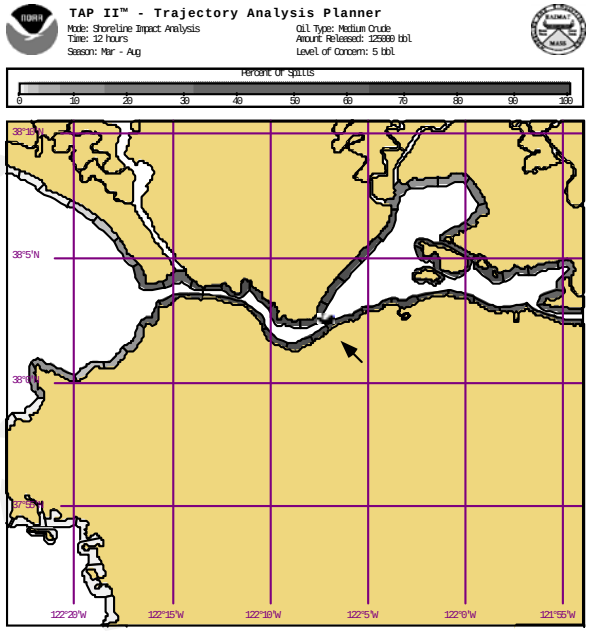
Site	Site Name														
sub-strategy	PREVENTION OBJECTIVE OR CONDITION FOR DEPLOYMENT														
	Harbor Boom	Swamp boom	Other boom/TYPE	Sorbant boom	Anchoring No	Anchoring type of gear	Boom boat	Skiff	Skimmer No	Skimmer Type	Special Equipment No	Special Equipment and kinds	(and notes)	deploy staff	Staff to tend
.3	-	**protection/exclusion boom: Protect the 2-mile stretch of marshfront from approaching heavy oil slick.**													
	11000				12	12/22+/danforth + chain	4	6					Bboat: very shallow draft; 1 hovercraft	25	
2-671	***Honker Bay West - Wheeler Island Shore***														
.1	-	**Exclude oil from entering barrow channels and slough entrances.**													
	1300	700			6	6/12+/danforhts & stakes	2	4						15	
.2	-	**exclusion/deflection boom at the best angle fend oil past marshfront when heavy oil is approaching the shore - divert the**													
	1700				3	3/22+/danforths	3	2						11	
.3	-	**Protective Booming: If there is threat of heavy oiling and saturation of the marsh front, deploy protective boom coverage,**													
	11000				12	12/22+/danforths & stakes	4	4					hovercraft. air boat; 4 very shallow Bboats	20	
2-672	***Honker Bay North - Van Sickle Island Shore***														
.1	-	**Exclude/collect oil: exclude from entering Spoonbill Creek and barrow channels and divert to collection on Van Sickle Isl s**													
	800	300		300	8	8/12+/danforths	2	2	1	SSS				10	
.2	-	**Deflect to collection site: use prevailing winds**													
	2000			500	5	5/22+/danforths w chain	2	1	1	SSS			hovercraft. airboat	8	
.3	-	**Protective Booming: If there is threat of heavy oiling and saturation of the marsh front, deploy protective boom coverage,**													
	12000				12	12/22+/danforths & stakes	4	6					very shallow Bboat, hovercraft/airboat	25	
2-673	***Honker Bay East - Chipps Island Shore***														
.1	-	**Exclude oil from entering barrow channels and slough entrances.**													
	0	1700		1000	12	4/12+& 2/5#+danforth & 6 stak	2	1						5	
.2	-	**Deflection at Pt Simmons, to divert oil past site to keep oil in channel and to avert carry-back into Honker Bay on eddy.**													
	600				3	3/22+/danforth w chain	1	1						11	
.3	-	**Protective Booming: If there is threat of heavy oiling and saturation of the marsh front, deploy protective boom coverage,**													
	13000						6	6					shallow Bboats, 1 hovercraft/airboat	25	
2-680	***Suisun Marsh West: Suisun Slough Drainage***														
.1	-	**Contain/exclude - minimize spread of oil through channels: use multiple diversion booms to collection sites, and close sid**													
	3000				24	24/22+/danforths	4	4	4	portable			Bboats; very shallow; 1 hovercraft	14	
2-690	***Suisun Marsh Central: Grizzly Isl / Montezuma Sl***														
.1	-	**Contain/exclude - minimize spread of oil through channels: use multiple diversion booms to collection sites, and close sid**													
	0	4000			32	32/22+/danforths	5	8	4	portable			bboat: shallow draft; 1 hovercraft	31	
2-695	***Suisun Marsh North: Denverton / Nurse Sl Drainage***														
.1	-	**Confine/Exclude - Minimize spread of oil through channels: use multiple diversion booms to collection sites, and close sid**													
	0	2000			16	16/22+/danforths	3	6	4	portable			Bboat: shallow draft; 1 hovercraft	21	

PROBABILITY OF OIL REACHING EACH SENSITIVE SITE IN GRA 6

GRP 6



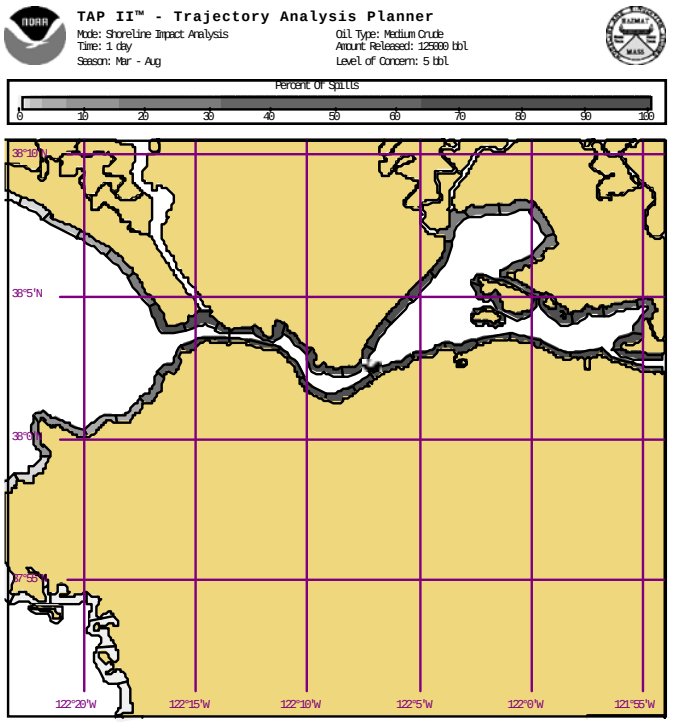
6 hours from start of spill



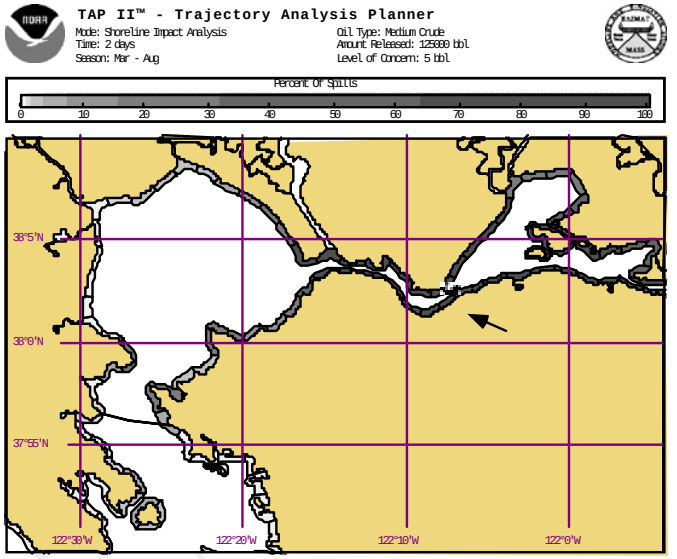
12 hours from start of spill

TAP II Maps for GRP6 Scenario: Spill of 125,000 bbls of crude at Carquinez Bridge in the Spring. Arrow indicates spill origin. The shades of grey at each impacted site correspond to a percentage in the legend of t of spill scenarios (from 500 runs of various wind, tides and currents) that brought more than 5 bbls (= Level (Concern) of oil to that site in the specified time frame (6hours or 12 hours).

GRP 6



24 hours from start of spill



48 hours from start of spill

TAP II Maps for GRP6 Scenario: Spill of 125,000 bbls of crude at Carquinez Bridge in the Spring. Arrow indicates spill origin. The shades of grey at each impacted site correspond to a percentage in the legend of the number of spill scenarios (from 500 runs of various wind, tides and currents) that brought more than 5 bbls (= Level Of Concern) of oil to that site in the specified time frame (24 hours or 48 hours).

Table of Percent of Spills that bring oil (> 5bbls) to each site from the GRA6 scenario.

ACP SITE#	ES	SITENAME	LAT N (Deg. Min.)	LONG W (Deg. Min.)	6 HOURS (% prob)	12 HOURS (% prob)	24 HOURS (% prob)
2-630	A	Suisun Shoal	38 03.5	122 06	100	100	100
2-654	A	Goodyear Marsh	38 04	122 07	100	100	100
2-603	A	Bulls Head Marsh and Pacheco Creek	38 03	122 07	99	100	100
2-605	A	Hastings Slough, Point Edith and Seal Island	38 03	122 03	70	93	97
2-601	A	Martinez Marsh	38 02	122 08	66	90	99
2-652	A	Benicia Marsh	38 02.7	122 09.7	62	86	96
2-631	A	Roe Island	38 04	122 02	54	78	87
2-607	A	Belloma Slough	38 03	122 01	48	70	80
2-632	A	Ryer Island	38 05	122 02	47	68	78
2-651	A	Southhampton Bay	38 04	122 11	46	75	96
2-608	A	Shore Acres Marsh	38 08	121 58.8	40	56	64
2-633	A	Middle Ground Island	38 03.7	121 59	40	56	64
2-667	A	Freeman & Snag Islands	38 08.8	121 59.5	40	54	69
2-583	A	Napa River Marshes	38 12	122 19	37	60	83
2-660	A	Grizzly Bay	38 08	122 02	37	48	56
2-665	A	Simmons Island	38 05.4	122 00	37	48	56
2-670	A	Honker Bay	38 04	121 56.3	36	21	26
2-702	A	Stake Point Marshes	38 03	121 57	34	46	62
2-582	A	N.E. San Pablo Bay	38 05	122 17	33	52	77
2-668	A	Dutton Island	38 08.8	121 59.5	31	44	58
2-705	A	Mallard Island	38 02	121 55	30	42	60
2-752	A	Chips Island, Southern Side	38 04	121 55	27	36	57
2-673	A	Honker Bay East - Chipps Island Shore	38 04	121 56.3	26	35	52
2-655	A	Joice Island, Suisun and Montezuma Sloughs	38 08	122 04	15	25	29
2-671	A	Honker Bay West - Wheeler Island Shore	38 04	121 56.3	8.8	27	35
2-672	A	Honker Bay North - Van Sickle Island Shore	38 04	121 56.3	3.6	21	26
2-504	A	Pinole Pt. Marshes - North	38 05	122 21		8.8	12
2-503	A	Pinole Pt. Marshes-South	37 59	122 21.6		7.2	10
2-501	A	Castro Creek and Marshes	37 58	122 24		3.6	5
2-506	A	San Pablo Bay Eelgrass Bed	37 59	122 25		3.6	5
2-452	A	Richmond Eelgrass Beds	37 58	122 24		3.4	5.6
2-427	A	Marin Islands	37 58	122 28		2.6	7.6
2-552	A	China Camp Marsh	38 00	122 28		2.6	7.6
2-505	A	Pinole Creek and Wetlands	38 01	122 18		2.6	3.6

RESPONSE PRIORITIES FOR BENICIA BRIDGE SCENARIO * GRA 6

TIDE AND WIND AT TIME OF INSTANEOUS DISCHARGE OF ANS	TIME PERIOD OILED (HOURS)	PRIORITY	SITE ID	SITE DESCRIPTION
SLACK < EBB - 10 NW	0	1		Spill Site Containment
WINTER RUNOFF	0	2		On-Water Recovery
125,000 bbl ANS crude	0-3	3	601	Martinez Marsh
	0-3	4	654	Southampton Bay
	3-6	5	603	Bull's Head Marsh
	6-12	6	582	NE San Pablo Bay (jetty)
	6-12	7	605	Hasting's Slough & Pt Edith
	6-12	8	631	Roe Island
	12-24	9	505	Pinole Creek
	12-24	10	503	Pinole Point
	12-24	11	632	Ryer Island
SLACK < EBB - 20 S	0	1		Spill Site Containment
WINTER RUNOFF	0	2		On-Water Recovery
125,000 bbl ANS crude	0-3	3	651	Southampton Bay
	6-12	2	601	Martinez Marsh
	6-12	3	603	Bull's Head Marsh
	6-12	4	582	NE San Pablo Marsh (jetty)
SLACK < FLOOD TIDE	0	1		Spill Site Containment
10 KNOT NW WIND	0	2		On-Water Recovery
WINTER RUNOFF	0-3	3	603	Bull's Head Marsh
125,000 bbl ANS crude	0-3	4	605	Hasting's Slough
	0-3	5	607	Weapons Station Marshes
	0-3	6	631	Roe Island
	0-3	7	601	Martinez Marsh
	3-6	8	608	Shore Acres
	3-6	9	632	Ryer Island
	3-6	10	633	Middle Ground
	6-12	11	702/705	Stake Pt. Marsh / Mallard Island
	6-12	12	708	Chipp's Island
SLACK < FLOOD TIDE	0	1		Spill Site Containment
20 KNOT S WIND	0	2		On-Water Recovery
WINTER RUNOFF	0-3	3	654	Goodyear Marsh
125,000 bbl ANS crude	3-6	4	655	Joice Island
	6-12	5	660	Grizzly Bay
	12-24	6	632	Ryer Island
	12-24	7	631	Roe Island
	12-24	8	603	Bull's Head Marsh
	12-24	9	601	Martinez Marsh
	12-24	10	662	Simmon's Island

* Based on Oil map trajectory model run by BlueWater Consultants in 1996
¤ Response strategy not yet written

Thomas Guide Location	Latitude N	Longitude W
	3 8 02	122 08

County: Contra Costa
USGS Quad: Benicia
NOAA Chart: 18656 Suisun Bay

Last Page Update : 1/1/2000

SITE DESCRIPTION:

This site includes the marshes and waterfront from the Benicia-Martinez Bridge to the Ozol pier. This site has pickleweed saltmarshes on both the east and west side of the Martinez marina. The marshes are prograding with emergent species along the very shallow margins. The marsh to the east behind the Shell Oil terminal has some diked impoundments and has a small channel leading back into the marsh. West of the Marina, Alhambra Creek opens to the marsh and has marshy vegetation along some of its length upstream. The shoreline vegetation from Alhambra Creek to Ozol Terminal grades from marsh to riprap. The marsh around the mouth of Alhambra Creek is East Bay Regional Parks shoreline.

SEASONAL and SPECIAL RESOURCE CONCERN

Marshes are A-priority at all times. Threatened and endangered species may be present throughout this site.

RESOURCES OF PRIMARY CONCERN

Pickleweed marshes with emergent marsh margins are on both sides of the marina. Shelter tidal flats in front of the marshes provide habitat for infauna and foraging for birds and fish. The riprap at the western edge along the railroad tracks has low sensitivity.

Marshes provide habitat for marsh birds, ducks, shorebirds, and in winter migratory waterfowl. Clapper rail and black rails may use these marshes occasionally.

Both the endangered salt marsh harvest mouse and endangered salt marsh wandering shrew are found here.

Two rare plants are found here: soft bird's beak and Delta tule pea.

CULTURAL, HISTORIC, and ARCHEOLOGICAL SENSITIVITIES

Contact the California Dept of Parks and Recreation - Office of Historic Preservation (Eric Allison -(916) 653-9125), and the Northwest Information Center, (Leigh Jordan, Sonoma State College ((707) 664-0880)) for specific information on historic or cultural resources in this area.

KEY CONTACTS: Trustee (T); Entry/Owner/Access (E); Cultural (C); or Other Assistance (O)

Type	Name / Title	Organization	Phone
B	Peter Baye, Ph.D. Coastal Plant Ecologist		(415) 310-5109
B,O	Joseph Didonato	East Bay Regional Park District	(510) 635-0135
B	Mike Josselyn	NOAA, National Marine Fisheries Service	(415) 454-8868
B	Jerry Karr	Audubon Society, Solano County Chapter	(707) 643-7089
B	Jan Knight	US Fish and Wildlife Service	(916) 978-4866
B	Niall F. McCarten, Ph.D.	Jones & Stokes Associates, Inc.	(916) 737-3000
B,O	Bill Nichols	East Bay Regional Park District	(510) 228-0112

ADDITIONAL SITE SUMMARY COMMENTS:

County and Thomas Guide Location	NOAA CHART	Latitude N	Longitude W
Contra Costa	18656 Suisun Bay	3 8 02	122 08

Last Page Update :

CONCERNS and ADVICE to RESPONDERS:

Primary concerns are oiling of marsh east and west, intrusion of oil up Alhambra Creek in the west side marsh, and intrusion up the tidal channel in the east side marsh. Exclude oil from both channels and divert oil away from marshes to catchments or to main channel. Avoid trampling marsh vegetation: rare plants and small endangered mammals are present. Avoid trampling oil into muds. Protect marsh frontage from oil as directed.

HAZARDS and RESTRICTIONS:

Air - Martinez Bridge power lines; Boats - shallow water & currents; ground traffic - railroad tracks, soft substrate

SITE STRATEGIES

Waters west and inshore from Martinez Marina are an eddy and have low current. This slow velocity water extends past OZAL pier. Currents from marina out are very stong. Near shore on both sides of Marina, particularly close to creek mouths is very shallow.

Strategy 2-601.1 **Objective: Primary: on the flood tide, exclusion booming mouth Alhambra Creek, other tidal channels, and protect nearby shoreline** ACP DATE 1/1/2000

a) Exclusion booming Alhambra Creek: 200' of swamp boom in a chevron configuration backed by sorbent boom at the inlet to .
b) Protection booming: Deploy 1100' of sorbent boom along the marsh to the west of Martinez Marina (both sides of creek but mostly on the west side.)
c) Exclude oil from entering the small tidal inlet to the marsh east of the marina with boom and sorbent (50' 4X4+). Tidal inlet mouth is located between Shell and Amoco Terminals/Shore Terminal wharf at bridge.

Strategy 2-601.2 **Objective: For the ebb tide, deflect oil away from and past Alhambra Creek & marsh with deflection boom** ACP DATE 1/1/2000

Deploy 600' of deflection boom extending west from inside the old ferry slip at Ferry Point (the pier), Martinez Marina. Set deflection angle into the current as may be possible under prevailing conditions.

Strategy 2-601.3 **Objective: Deflection for the Flood Tide: deflect away from Martinez shore** ACP DATE 1/1/2000

Deflect oil away from shoreline with 2000' 8X8+ Hboom. From the shoreline about a half mile west of treatment plant, deploy boom at a diagonal to the 15' depth contour.

Strategy 2-601.4 **Objective: Proctive Shoreline Booming: If there is threat of heavy oiling and saturation of the marsh front, deploy protective boom coverage, when resource use will not preclude defending other sites against SO 5 and 6 impacts.** ACP DATE 1/1/2000

Deploy exclusion boom along the marsh front from the Benicia Bridge to the marina and from Alhambra Creek to the riprap to the west.

Deploy 5200' of protective boom (4X4+) be deployed between Suisun Point and the Martinez Marina seawall, and deploy 3300' of protective boom (9X9+ or 4X4+ depending on presence of wind and chop) from Ferry Point at Martinez Marina to 1000 yards west where marsh ends and riprap begins. Deploy close to shore where shallows will aid with wind chop spillover problems; if there are wind chop conditions, boom layers will need to be backed with a second layer of 4X4+ boom. Because the water is so shallow, very shallow boom boats and skiffs will be required due to grounding and stranding hazards. (A similar strategy for deployment of exclusion boom is illustrated in "Potential Oil Spill Protection Strategies for San Francisco Bay, California" (Hayes and Montello, 1994).)

Table of Response Resources

strategy number	harbor boom	swamp boom	Other boom type	sorb boom	Anchoring no	Anchoring type and gear	Boom boat	Skiffs punts	Skimmers No	Skimmers Type	Special Equipment No and kinds	staff deploy	Staff tend
2-601.1	0	250		1300	1	1/12#+/ anchor & stakes	0	1			boat capable of shallow grounding	2	
2-601.2	600				1	1/22+/danforth + 20' chain	1	0				3	
2-601.3	2000				4	4/22+/danforths	3	1				11	
2-601.4	0	8500			9	9/12/danforths & stakes	3	3			bboats - very shallow, strandable.	15	

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

Proceed on Hwy 680 toward Martinez and exit on Marina Vista just south of the Benicia-Martinez toll bridge and drive west to city center. Turn right and drive across the railroad tracks to Martinez Marina. Marshes are on both sides of the Marina and park. There are access points at the Marina Vista Park (contact East Bay Regional Parks Dispatch). There is also unimproved shoreline access along the Souther Pacific Rail Road tracks on the west side of Alhambra Creek (contact SP Rail Road). This site includes the marshes and waterfront from the Benicia-Martinez Bridge to the Ozol pier.

LAND ACCESS: Thorough land access to west. Foot only to east.

WATER LOGISTICS:

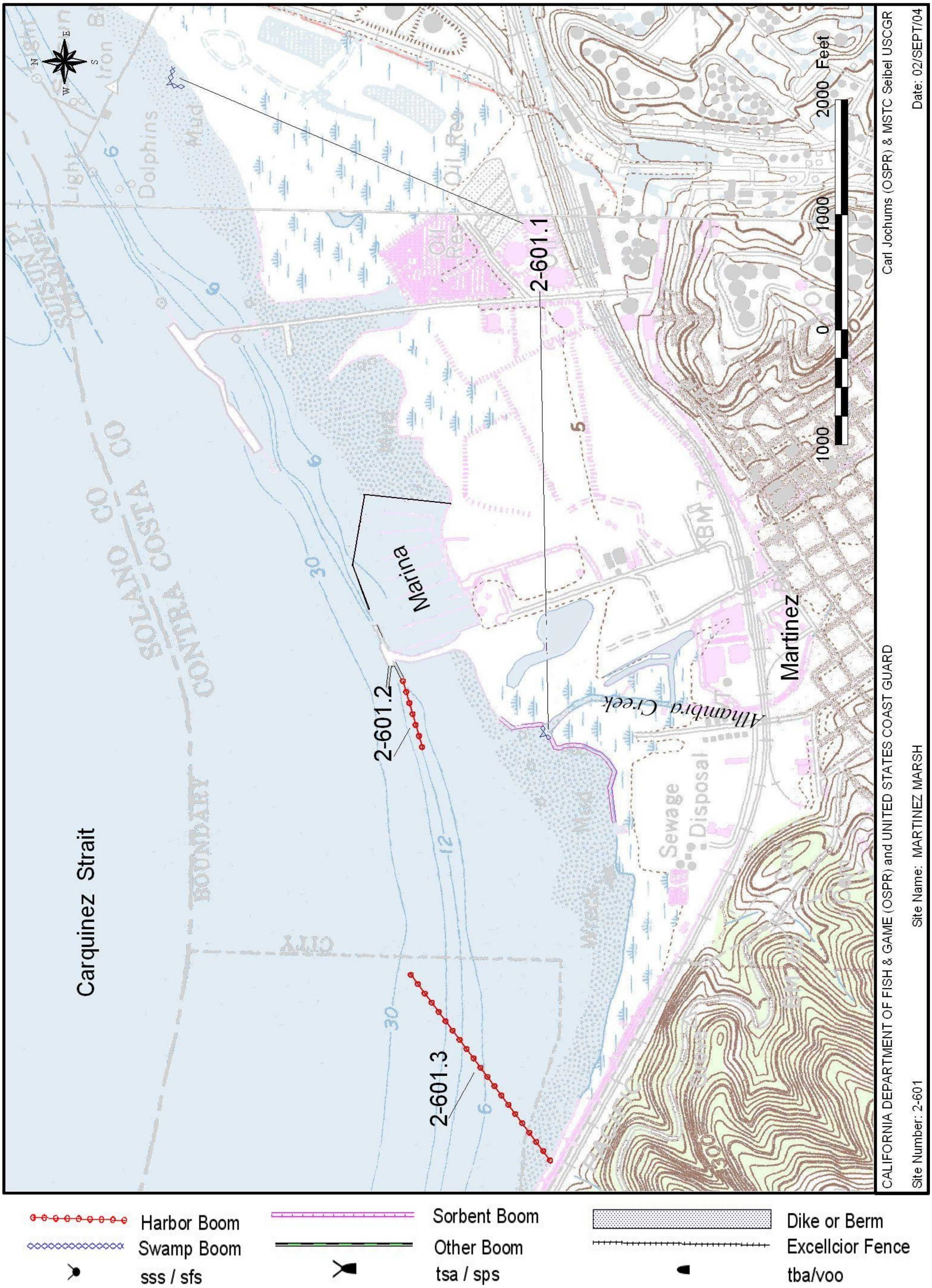
Limitations: depth, obstruction	Very shallow near shore. Some obstructions on west half.
Launching, Loading, Docking and Services Available:	Launching and full boat services available at Martinez Marina on-site. Most boat services are also available across the river at Benicia.

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

Best for this site is Martinez Marina, but Benicia has good staging facilities. Vallero Wharf also has good staging capacity.

COMMUNICATIONS PROBLEMS:

ADDITIONAL OPERATIONAL COMMENTS:


Carquinez Strait
Marina
Martinez
Alhambra Creek
Sewage Disposal
2-601.1
2-601.2
2-601.3
0 1000 2000 Feet
1000
Carl Jochums (OSPR) & MSTC Seibel USCGR
Date: 02/SEPT/04
CALIFORNIA DEPARTMENT OF FISH & GAME (OSPR) and UNITED STATES COAST GUARD
Site Name: MARTINEZ MARSH
Site Number: 2-601
Harbor Boom
Swamp Boom
sss / sfs
Sorbent Boom
Other Boom
tsa / sps
Dike or Berm
Excellcior Fence
tba/voo

2-603 -A Site Summary- Bulls Head Marsh and Pacheco Creek

2-603 -A

		Thomas Guide Location	Latitude N	Longitude W
County:	Contra Costa		3 8 03	122 07
USGS Quad:	Vine Hill	NOAA Chart: 18656 Suisun Bay		

Last Page Update : 1/1/2000

SITE DESCRIPTION:

Site extends from Benicia-Martinez Bridge to the Avon Wharf and includes the tidal marshes tributary to Suisun Bay and Pacheco Creek (also called Walnut Creek and Avon Slough) landward to Hwy 4. There are two extensive marshes south of Waterfront Road (Marina Vista Rd): Shell Marsh (tributary to Peyton Slough and owned by East Bay Regional Parks) and an unnamed marsh tributary to Pacheco Creek. The marshes north of Waterfront Rd between Hwy I-680 and Pacheco Creek are connected to the south shore of Suisun Bay by several small waterways. The marshes south of Waterfront Rd are mostly pickleweed-tule-saltgrass marshes with emergent growths along the edges of waterways and occasional patches of cattail marshes, whereas marshes to the north are dominated by tules and sedges, particularly near the water front and slough margins. Pacheco Creek is very fresh in its more upstream reaches, particularly during high rainfall periods. Salmon and Steelhead are common in Pacheco Creek but do not spawn in the system. There are various dikes and flood control channels throughout the marsh. Pacheco Creek is extremely shallow, has an even shallower bar across its mouth, and has marsh encroaching along its length. The other marsh channels tend to be deep. Regardless, the entire marshfront is mudflats at very low tides. There are three refineries, a chemical plant, and several tank farms adjacent to and tributary to this site.

SEASONAL and SPECIAL RESOURCE CONCERN

The marshes are an "A" priority all year

RESOURCES OF PRIMARY CONCERN

The marshes have a rich flora and range from high pickleweed-spartina marsh to cattail to emergent tule marsh on prograding shorelines and channel margins. Much of the marsh has been manipulated with dike and mosquito abatement channels. Much of the marsh beyond the tidal channels is flood only on high tides and during the rainy season.

A variety of wading and marsh birds use this area year-round and it provides winter habitat for migratory birds and ducks. The endangered California clapper rail uses this habitat.

This is also habitat for the endangered saltmarsh harvest mouse and the saltmarsh ornate shrew.

CULTURAL, HISTORIC, and ARCHEOLOGICAL SENSITIVITIES

Contact the California Dept of Parks and Recreation - Office of Historic Preservation (Eric Allison -(916) 653-9125), and the Northwest Information Center, (Leigh Jordan, Sonoma State College ((707) 664-0880)) for specific information on historic or cultural resources in this area.

KEY CONTACTS: Trustee (T); Entry/Owner/Access (E); Cultural (C); or Other Assistance (O)

Type	Name / Title	Organization	Phone
B	Peter Baye, Ph.D. Coastal Plant Ecologist		(415) 310-5109
B T	Baylands Nature Preserve Office	Baylands Nature Preserve	(650) 329-2506
B	Brenda Grewell Restoration Ecologist	US Dept. of Agriculture	(530) 752-6260
B	Mike Josselyn	NOAA, National Marine Fisheries Service	(415) 454-8868
B	Jerry Karr	Audubon Society, Solano County Chapter	(707) 643-7089
B T	Jan Knight	US Fish and Wildlife Service	(916) 978-4866
B	Niall F. McCarten, Ph.D.	Jones & Stokes Associates, Inc.	(916) 737-3000

ADDITIONAL SITE SUMMARY COMMENTS:

County and Thomas Guide Location	NOAA CHART	Latitude N	Longitude W
Contra Costa	18656 Suisun Bay	3 8 03	122 07

Last Page Update :

CONCERNS and ADVICE to RESPONDERS:

Prime concern is oil being carried into the interior marsh via tidal channels and oiling of marsh margins. So, the first priority is to exclude oil from tidal channels and openings. Secondarily, there is a plan to collect oil at the Pacheco Creek shoreline to prevent its free spread and movement. As time and priority allow, the entire marsh shoreline may be protectively boomed. Avoid trampling the marsh vegetation and be aware that small endangered mammals are present. Avoid trampling oil into the mud.

HAZARDS and RESTRICTIONS:

This area is very shallow and exposed mudflats at low tide.

SITE STRATEGIES

Strategy 2-603.1 **Objective: Exclude oil from entering Pacheco Creek, Peyton Slough and four other tidal channels on flood currents Rv 011305**

ACP DATE 4/11/2002

Deploy exclusion booms in a chevron configuration in front of each tidal slough, securing boom ends well up and downstream from the openings to avoid entrainment and short-circuiting. Anchors will be necessary to keep chevron formation. Boom ends may be anchored at shore with stakes.

a) 1000' 8X8+ harbor boom at the mouth of Pacheco Slough with 22# anchors

b) At Peyton Slough and the other four tidal inlets west of Pacheco Slough, use 4X4+ in lengths of 50' and 100'. Back with sorbent boom.

c) If boat passage into launch ramp in Pacheco Creek for response activities, it may be necessary to have boom tending or cascades.

Strategy 2-603.2 **Objective: For flood tides, deflect oil to collection site in Pacheco Creek on Avon refinery shoreline to prevent oil spread to other marsh sites, to collect it, and prevent its free movement.**

ACP DATE 4/11/2002

Create a collection site at the northerly most exteme of the levee road on refinery treatment pond east of Pacheco Creek.

a) First, deploy two diagonal barriers of swamp (river) boom (700' 4X4+) to direct the oil from the mouth of the Creek to the collection site. Use stakes to anchor and maintain shape. (If response boat passage into Pacheco Creek is necessary, boom tending may be required.)

b) Then line the marsh along the east bank with swamp (river) boom (1100') and tie the boom into the exclusion boom at the mouth. Use stakes to anchor and maintain shape.

c) After the collection pocket boom is in place (a & b above), deploy a deflection boom (2700' 8X8+ harbor boom total) from the Shore Terminals Wharf to the east side of Pacheco Slough mouth to funnel the oil into collection on the flood tide. Usually exclusion strategy (2-603.1) will have been deployed first, and 1000' of boom will already be at the mouth and must be repositioned as part of the deflection (so the amount of boom needed will be 1000 ft more if that boom is not already onsite.) Use multiple anchors with heavy chain to hold the boom in position in the currents.

d) Improve the shoreside collection site as necessary. Consider excavating a pocket and seek approval from IC. Place plywood or other walking sureface at work site to prevent oil being trampled into muds.

Strategy 2-603.3 **Objective: Marsh front protective booming: If there is threat of heavy oiling and saturation of the marsh front, and when such use will not preclude defending other sites with Strategic Objectives 5 and 6 action (seek concurrence of the trustee strategist).**

ACP DATE 4/11/2002

Deploy protective boom along the marsh front from the Benicia Bridge to the Pacheco Slough, using 9,000 ft of harbor boom. If there are high energy wave conditions, a second layer of swamp boom may be required. (A strategy for the deployment of exclusion boom at this site is illustrated in Potential Oil-Spill Protection Strategies for San Francisco Bay, CA (Hayes and Montello, 1994).)

Strategy 2-603.4 **Objective: Collection/ containment of upstream threats: If oil is moving down Pacheco Slough from an inland spill, deploy a containment collection as in strategy 2-603.2**

ACP DATE 1/1/2000

Create a collection site at the southerly most convenient site on the windward shore, such as the Waterfront Road Pacheco Creek bridge or launch ramp. Most convenient deployment of boom from shore using skiffs, due to shallows.
a) First, deploy two diagonal barriers of swamp (river) boom (600' 4X4+) to direct the oil in the Creek to the collection site. Use stakes to anchor and maintain shape. (To permit boat passage into Pacheco Creek, it may be necessary to have boom tending.)
b) Line the marsh along the east bank with swamp (river) boom (1000'). Use stakes to anchor and maintain shape.
c) Improve the shore side collection site as necessary. Consider excavating a pocket and seek approval from IC. Place plywood or other walking sureface at work site to prevent oil beng trampled into muds.

Strategy 2-603.5 **Objective: Back-up for .1 exclusion in case of over-wash threat**

ACP DATE

Deploy second layer of exclusion booms in a chevron configuration in front of each tidal slough just behind first layer. As with primary exclusion, secure boom ends well up and downstream from the openings to avoid entrainment and short-circuiting.
a) 1000' 4x4+ swamp (curtin) boom will be needed at the mouth of Pacheco Slough;
b) At Peyton Slough and the other four tidal inlets use 4X4+ in lengths of 50' and 100'.

Table of Response Resources

strategy number	harbor boom	swamp boom	Other boom type	sorb boom	Anchoring no	Anchoring type and gear	Boom boat	Skiffs punts	Skimmers No	Skimmers Type	Special Equipment No	Special Equipment and kinds	staff deploy	Staff tend
2-603.1	1100	400		1000	19	/22+ & 5/12+/danforths + chain 10 stak	1	2				bboat: strandable, shallow water, stakes	7	
2-603.2	1700	2500		300	5	5/22+/danforth + chain	2	2	1	SSS		stakes, bboat: strandable, shallow water	8	
2-603.3	9000				14		3	1					11	
2-603.4	0	1600			6	6/12+ and stakes		1	1	SSS			3	
2-603.5	0	1400	0	0	0		0	0	0		0			

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

Exit Hwy I-680 to Marina Visa / Waterfront Road at Martinez (exit just south of Benicia Martinez Bridge) and proceed east. There is access to the shoreline from Shore Terminal's wharf, from the Tosco Avon Refinery, and at the Bridge over Pacheco Creek. By boat, proceed east from the Martinez Marina about a mile to the area east of the Martinez-Benicia Bridge. Site extends from Benicia-Martinez Bridge to the Avon Wharf and includes the tidal marshes tributary to Suisun Bay and Pacheco Creek (also called Walnut Creek and Avon Slough) landward to Hwy 4.

LAND ACCESS: only at Tosco and Shore Terminal wharf; otherwise foot only

WATER LOGISTICS:
Limitations: depth, obstruction: exceedingly shallow - mud at low tide

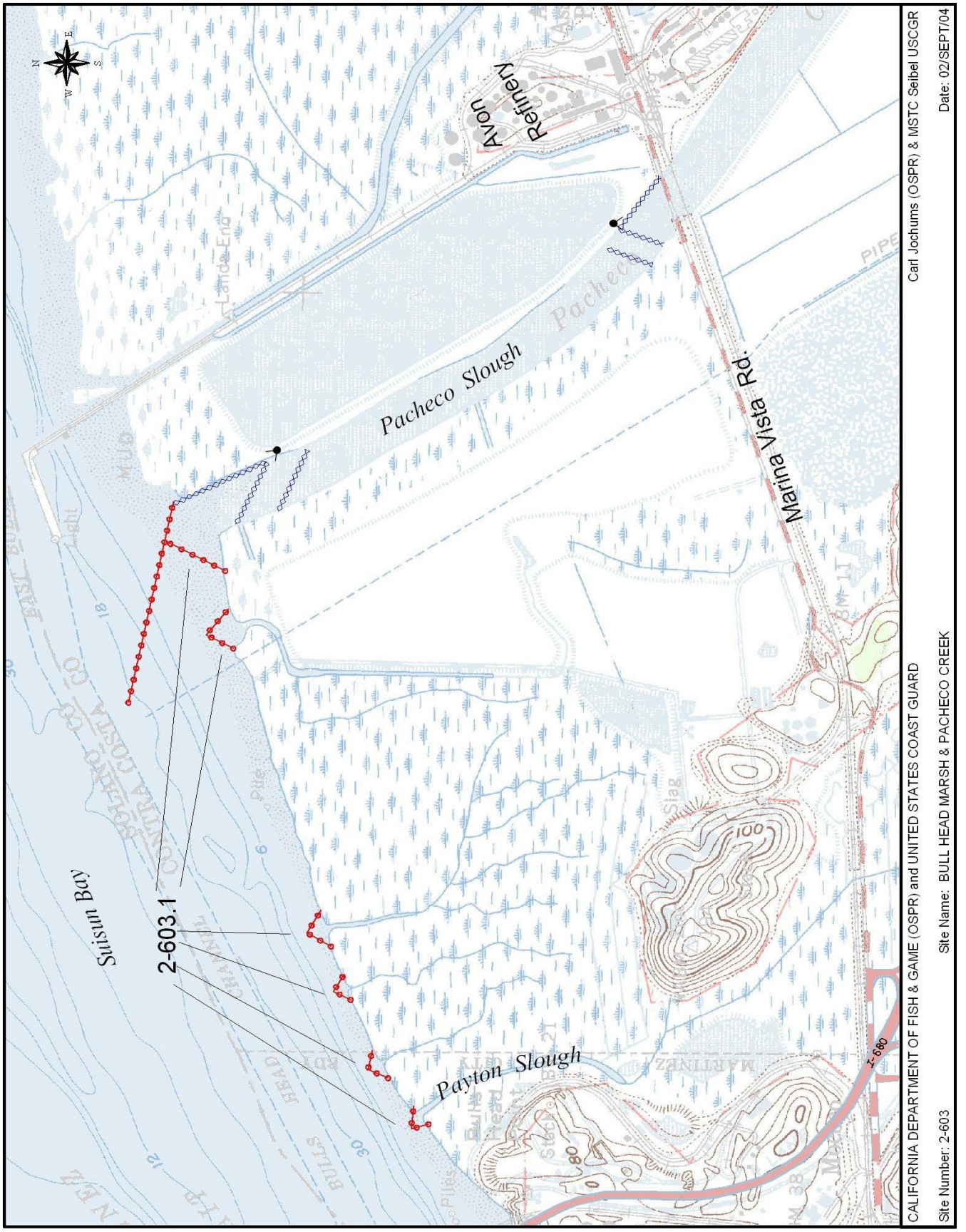
Launching, Loading, Docking and Services Available: launch at Tosco to Pacheco Creek during higher tides only, otherwise Martinez Marina and Benicia Marina. Full service at Martinez and Benicia.

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

Best staging is at Martinez because of the amount of services available. Benicia is also a good staging site. Locally, equipment may be staged at Tosco at Pacheco Creek or at Shore Terminal wharf.

COMMUNICATIONS PROBLEMS:

ADDITIONAL OPERATIONAL COMMENTS:



Harbor Boom
Swamp Boom
sss / sfs

Sorbent Boom
Other Boom
tsa / sps

Dike or Berm
Excellcior Fence
tba/voo

2-605 -A Site Summary- Hastings Slough & Point Edith Marshes

2-605 -A

Thomas Guide Location	Latitude N	Longitude W
	3 8 03	122 03

County: Contra Costa

USGS Quad: Vine Hill

NOAA Chart: 18656 Suisun Bay

Last Page Update : 7/1/2005

SITE DESCRIPTION:

Site extends from the Tosco Avon terminal wharf west to Hastings Slough and includes all the marshes tributary to Hastings Slough including those south of Waterfront Road. Marshes from Pt Edith to the Avon Wharf are property of Department of Fish and Game (700+ acres), but the marshs around Hastings Slough and much of the tributary marshland (2000+ acres) is military property and entry is prohibited without prior clearance. This marshes have a large tidal exchange volume, particularly Hastings Slough marshes. The DFG marshes drain directly to the bay via 10 tidal sloughs. Hastings Slough is very sinuous and has many tributary channels including Mt. Diablo Creek. Ttroughout the marsh there is an extensive network of mosquito abatement channels which connect the freshwater and brackish marshes between. Most of the marsh is pickleweed, but there are large stands of tules and standing ponds. Portions of the property south of Waterfront Rd and just east of the Avon refinery are refinery property.

SEASONAL and SPECIAL RESOURCE CONCERN

The marshes are an "A"-priority all year. The area is important to migratory birds in the spring and fall. Endangered species are present year-round.

RESOURCES OF PRIMARY CONCERN

Emergent and tidal channel marshes are of highest concern because of immediate vulnerability to spills and opportunity to spread oil extensively though the marsh because of large tidal prism. Some of the internal marshes are connected by flood control structures and can be closed to exclude oil conveyance to interior marsh. Marsh types include emergent, high saltgrass, pickleweed, tule, brackish ponds, and pockets of freshwater marsh.

The endangered California clapper rail, threatened California black rail, saltmarsh common yellowthroat, and Suisun song sparrow are found here.

The marshes are inhabited by the endangered salt marsh harvest mouse.

Several rare plants occur in this site. Mason's lilaeopsis is found in the splash zone along the marsh front. The marshes also contain the rare plant species soft bird's beak, and Delta tule pea occurs on the Seal Islands.

CULTURAL, HISTORIC, and ARCHEOLOGICAL SENSITIVITIES

Contact the California Dept of Parks and Recreation - Office of Historic Preservation (Eric Allison -(916) 653-9125), and the Northwest Information Center, (Leigh Jordan, Sonoma State College ((707) 664-0880)) for specific information on historic or cultural resources in this area.

KEY CONTACTS: Trustee (T); Entry/Owner/Access (E); Cultural (C); or Other Assistance (O)

Type	Name / Title	Organization	Phone
B	Peter Baye, Ph.D. Coastal Plant Ecologist		(415) 310-5109
B	Brenda Grewell Restoration Ecologist	US Dept. of Agriculture	(530) 752-6260
B	Mike Josselyn	NOAA, National Marine Fisheries Service	(415) 454-8868
B	Jerry Karr	Audubon Society, Solano County Chapter	(707) 643-7089
BLO	Tom Kellogg Engineer	MOTCO - US Army	(925) 246-4110
B	Jan Knight	US Fish and Wildlife Service	(916) 978-4866
B	Niall F. McCarten, Ph.D.	Jones & Stokes Associates, Inc.	(916) 737-3000

ADDITIONAL SITE SUMMARY COMMENTS:

County and Thomas Guide Location	NOAA CHART	Latitude N	Longitude W
Contra Costa	18656 Suisun Bay	3 8 03	122 03

Last Page Update : 7/1/2005

CONCERNS and ADVICE to RESPONDERS:

The prime concerns are oil penetrating the marsh up tidal sloughs on tidal currents, particularly Hastings Slough, and oil saturating marsh vegetation on exposed marsh fronts and margins. Exclusion is first priority: to Hastings Slough and small channels. Next priority is to deflect oil away from these inaccessible marshy shores. During response be aware that there are very small rare plants and mammals at the shoreline. So, minimize foot traffic. Avoid trampling vegetation and avoid trampling oil into muds.

HAZARDS and RESTRICTIONS:

Some of the waterfront has very shallow mudflats. There are submerged obstructions in Hastings Slough for about 50 yds south of bridge overcrossing.

SITE STRATEGIES

Flood currents in tidal channels are too great to exclude oil once it has entered the channels. Exclusions must be set to keep oil from being pulled into the mouths of channels using chevron exclusions anchored well away (both to each side and in front) from channel openings. Waters are very shallow throughout except at Point Edith and within tidal channels.

Strategy 2-605.1 **Objective: Exclude oil from Hastings Slough and tidal channels to prevent oil from being carried into marsh on flood tides. Revised 011305.** ACP DATE 7/1/2005

Exclude oil from entering all tidal sloughs using chevron booming configurations, including center anchors, and anchor boom ends well outside channel mouths to avoid entrainment and short circuiting around boom ends.
a) Hastings Slough: 1100' 8X8+ deployed in a modified chevron beginning well to the west (200'+) of the mouth. Back with sorbent boom. 3/22+/danforths.
b) The 2 sloughs just east of and one at Pt Edith: (400' 9X9+ and 1/22+ & 2/12+ danforths total.) Back with sorbent boom.
c) The ten tidal openings west of Pt Edith: 100' 4X4+ for each opening except #7 (from west) requires 200' (1100' total). Back each with sorbent.

Strategy 2-605.2 **Objective: Deflect oil away from shoreline for sites 2-605 and 2-607 on flood tide.** ACP DATE 7/1/2005

Deploy 2400' deflection boom from just west of Pt Edith past channel marker R2 and into channel toward chanel marker G3.

Strategy 2-605.3 **Objective: Back-up of Exclusion booming of .1 strategy for wave conditions: if waves or chop is likely to wash oil over boom.** ACP DATE

a) Hastings Slough: deploy a second layer of boom (800' 4X4+) close behind to catch and exclude over wash. 3/12+/danforths.
b) The 2 sloughs just east of and one at Pt Edith: (400' 4X4+ and 2/12+ danforths total.) Back with sorbent boom.
c) The ten tidal openings west of Pt Edith: 100' 4X4+ for each opening except #7 (from west) requires 200' (1100' total). Back each with sorbent.

Strategy 2-605.4 **Objective: Marsh front protective booming: If there is threat of heavy oiling and saturation of the marsh front, and when such deployment will not preclude defending other sites with Strategic Objectives 5 and 6 (seek concurrence of the trustee stratigist).** ACP DATE 1/1/2000

Deploy protective boom along the marsh front from the Tosco Wharf to the US Navy piers and linking with existing boom deployments as convenient: an additional 7,000 ft of harbor boom and ten additional anchors will be required in combination with boom already deployed in strategies .1 and .2. (A similar strategy for the deployment of exclusion boom at this site is illustrated in Potential Oil-Spill Protection Strategies for San Francisco Bay, CA (Hayes and Montello, 1994).)

Table of Response Resources

strategy number	harbor boom	swamp boom	Other boom type	sorb boom	Anchoring no	Anchoring type and gear	Boom boat	Skiffs punts	Skimmers No	Skimmers Type	Special Equipment No	Special Equipment and kinds	staff deploy	Staff tend
2-605.1	1500	1100		2300	38	5/22+ & 11/12+ danforth, 22 stakes	2	6				bboat: shallow, strandable. Stakes	18	
2-605.2	2400				6	5/22+/danforths + 20'chain	3	0					9	
2-605.3	0	2300	1000	0	5	12+/danforths	0	0	0	0				
2-605.4	7000				10	10/22+/danforths	4	2				bboats: very shallow, groundable.	14	

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

By boat, the site is east of the Benicia Bridge from the Avon Refinery wharf to the Navey Piers. By vehicle exit Hwy I-680 at Marina Vista (first exit south of Benicia Bridge - Waterfront Rd) and proceed west to Avon Refinery gate; request access and proceed east: Marina Vista (Waterfront) Road is blocked at the Hastings Slough Bridge by a Weapons Station locked gate. Important: Permission to enter eastern portion of the area must be obtained from the U.S. Naval Weapons Station

Concord. By arrangement with Weapons Station Security only, access from Highway 4 to CNWS exit north on Port Chicago Highway to Base Gate to request entry: Contact USCG Watch 415-399-3546 or 3547. Site extends from the Tosco Avon terminal wharf west to Hastings Slough and includes all the marshes tributary to Hastings Slough including those south of Waterfront Road. Marshes from Pt Edith to the Avon Wharf are property of Department of Fish and Game (700+ acres), but the marshs around Hastings Slough and much of the tributary marshland (2000+ acres) is military property and entry is prohibited without prior clearance.

LAND ACCESS: All types to Waterfront Road. Otherwise foot only.

WATER LOGISTICS: Very shallow water. Exposed mud at low tide.
Limitations: depth, obstruction

Launching, Loading, Docking and Services Available: very poor launch at CNWS tug wharf. Commercial Launching at Martinez, Benicia, and McAvoy's in Bay Point, all have complete services. Tosco launch is at Pacheco Slough.

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

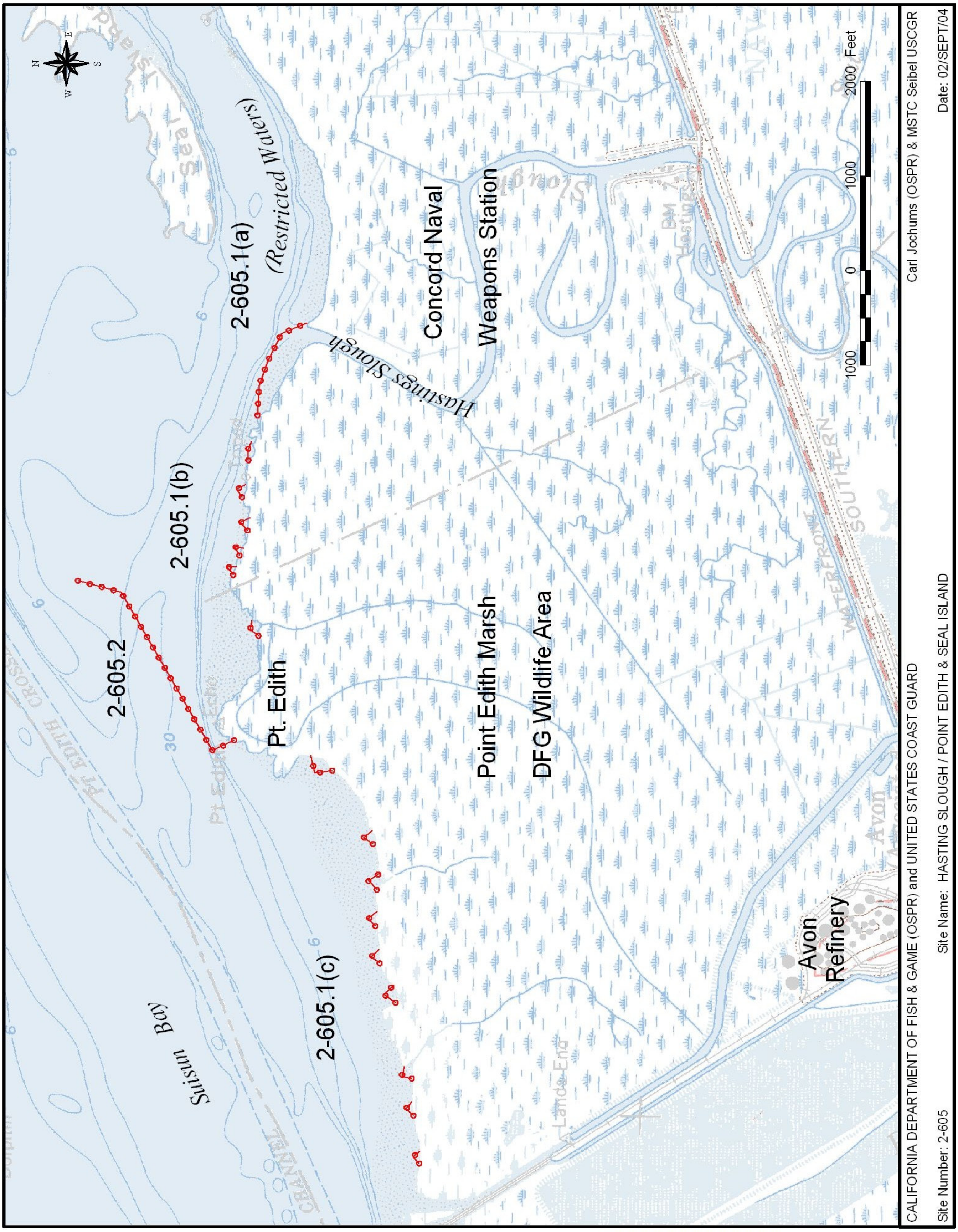
Martinez and McAvoy-Harris's are two primary staging areas depending on zone of spill impacts. Both have wide variety of services and access, potential for security control.

COMMUNICATIONS PROBLEMS: None

ADDITIONAL OPERATIONAL COMMENTS:

Strategy Diagram- Hastings Slough & Point Edith Marshes

2-605 -A



Harbor Boom | Sorbent Boom | Dike or Berm
Swamp Boom | Other Boom | Excellcior Fence
sss / sfs | tsa / sps | tba/voo

2-607 -A Site Summary- Weapons Station Marshes & Seal Islands

2-607 -A

Thomas Guide Location	Latitude N	Longitude W
	3 8 03	122 01

County: Contra Costa

USGS Quad: Vine Hill

NOAA Chart: 18656 Suisun Bay

Last Page Update : 7/1/2005

SITE DESCRIPTION:

This site includes Seal Islands and the waterfront from Hastings Slough mouth east to the General Chemical Plant at Middle Pt bounded on the south by the Southern Pacific Railroad and Waterfront Rd. These marshes are all on highly restricted Military property. The site may be divided in three parts. Belloma wetlands is the easterly portion from Middle Pt to Seal islands and mostly fronted by piers; it has about 700 acre area and three small tidal soughs (all fronted by piers and difficult to access from water). The marshes on the west end of the site are fed by a tidal inlet immediately west of the wharf facilities; this channel goes all the way back to waterfront road and may have cross flow with Hastings Slough via mosquito abatement channels. Seal Islands are at the northwest end of the marsh front opposite the tug docks. The islands are high marsh - spartina, sedges, and tules. The inland marshes are brackish water marsh with pickleweed and spartina high marsh and tule sedge in wet areas.

SEASONAL and SPECIAL RESOURCE CONCERN

The marshes are an "A" priority all year.

RESOURCES OF PRIMARY CONCERN

These are extensive pickleweed marshes with emergent tule margins.

The marshes are inhabited by the endangered California clapper rail and threatened California black rail. This is prime waterfowl habitat, particularly for the migratory period.

The endangered Salt marsh harvest mouse thrives here.

Several sensitive plants occur here: Mason's lilaeopsis, Suisun marsh aster, Delta tule pea.

CULTURAL, HISTORIC, and ARCHEOLOGICAL SENSITIVITIES

Contact the California Dept of Parks and Recreation - Office of Historic Preservation (Eric Allison -(916) 653-9125), and the Northwest Information Center, (Leigh Jordan, Sonoma State College ((707) 664-0880)) for specific information on historic or cultural resources in this area.

KEY CONTACTS: Trustee (T); Entry/Owner/Access (E); Cultural (C); or Other Assistance (O)

Type	Name / Title	Organization	Phone
	Peter Baye, Ph.D. Coastal Plant Ecologist		(415) 310-5109
B	Brenda Grewell Restoration Ecologist	US Dept. of Agriculture	(530) 752-6260
B	Jerry Karr	Audubon Society, Solano County Chapter	(707) 643-7089
OL	Tom Kellogg Engineer	MOTCO - US Army	(925) 246-4110
B	Jan Knight	US Fish and Wildlife Service	(916) 978-4866
	Niall F. McCarten, Ph.D.	Jones & Stokes Associates, Inc.	(916) 737-3000
ELO	Concord Naval Weapons Station Police	US Navy, Concord Naval Weapons Station	(925) 246-4041
OL	Hess Rouhafza Chief Engineer	US ARMY - MOTCO	(925) 246-4154
ELO	Rich Schlegel LtCmdr	MOTCO UN Navy	(925) 246-4140

ADDITIONAL SITE SUMMARY COMMENTS:

County and Thomas Guide Location	NOAA CHART	Latitude N	Longitude W
Contra Costa	18656 Suisun Bay	3 8 03	122 01

Last Page Update : 7/1/2005

CONCERNS and ADVICE to RESPONDERS:

This extensive marsh is very sensitive and has endangered species. If oil gets into the marsh the problems will be complicated due to the military security issues here. The plan is to exclude oil from the marsh by booming or diking the inlets. Response concerns are : 1) get permission from USN before attempting any access; 2) avoid trampling vegetation: tiny endangered plants are present; avoid trampling oil into the muds.

HAZARDS and RESTRICTIONS:

Unauthorized personnel or trespassers are subject to arrest. Beware of shallow and pier traffic.

SITE STRATEGIES

This is a high security area. Proceed only at the direction of Military Site Security. All four slough tidal slough openings can be addressed from shore using a skiff or put to deploy light boom.

Strategy 2-607.1 Objective: Exclusion booming of four Sloughs.

ACP DATE 7/1/2005

Military response resources may be available at the Weapons Station to boom off the slough.
a) at slough west of facilities, deploy 500 ft. of 6X6+ exclusion boom across the mouth in a chevron formation attached to shore well outside the mouth and back with sorbent boom.
b) at first slough east of facilities, deploy 100 ft. of 6X6+ exclusion boom across the mouth in a chevron formation attached to shore well outside the mouth and back with sorbent boom.
c) at 2nd slough east of facilities, deploy 50 ft. of 6X6+ exclusion boom across the mouth in a chevron formation attached to shore well outside the mouth and back with sorbent boom.
d) at east-most slough, deploy 400 ft. of 6X6+ exclusion boom across the mouth in a chevron formation attached to shore well outside the mouth and back with sorbent boom.

Strategy 2-607.2 Objective: diversion booming on Flood tide: Execute 2-605.2 divert out of channel and away from sites 2-605 & 2-607

ACP DATE 7/1/2005

Strategy 2-607.3 Objective: Exclusion of Sloughs by sediment dike.

ACP DATE 7/1/2005

Construct a temporary sediment dike across all four sloughs. Naval response resources at the Concord Weapons Station may be available to dike off the slough. (Requires BCDC and US Corp Engineer contacts)

Table of Response Resources

strategy number	harbor boom	swamp boom	Other boom type	sorb boom	Anchoring no	Anchoring type and gear	Boom boat	Skiffs punts	Skimmers No	Skimmers Type	Special Equipment No	Special Equipment and kinds	staff deploy	Staff tend
2-607.1		1150		900	13	3/12+/danforth & 10 stakes	0	1					2	
2-607.2	0	0	0	0	0		0	0	0		0			
2-607.3	0	0	0	0	0		0	0	0		2	skiploader & dump truck		

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

IMPORTANT: Permission to enter the area, by land or water, must be obtained from the U.S. Naval Weapons Station, Concord. Exit Hwy 4 at Port Chicago Hwy to Main St and proceed to main gate for entry permission and directions. By water proceed along the shoreline from Martinez (east) or from McAvoy's (west) until you reach the Navy piers. This site includes Seal Islands and the waterfront from Hastings Slough mouth east to the General Chemical Plant at Middle Pt bounded on the south by the Southern Pacific Railroad and Waterfront Rd. These marshes are all on highly restricted Military property.

LAND ACCESS: Belloma slough has road access; the remainder is foot only.

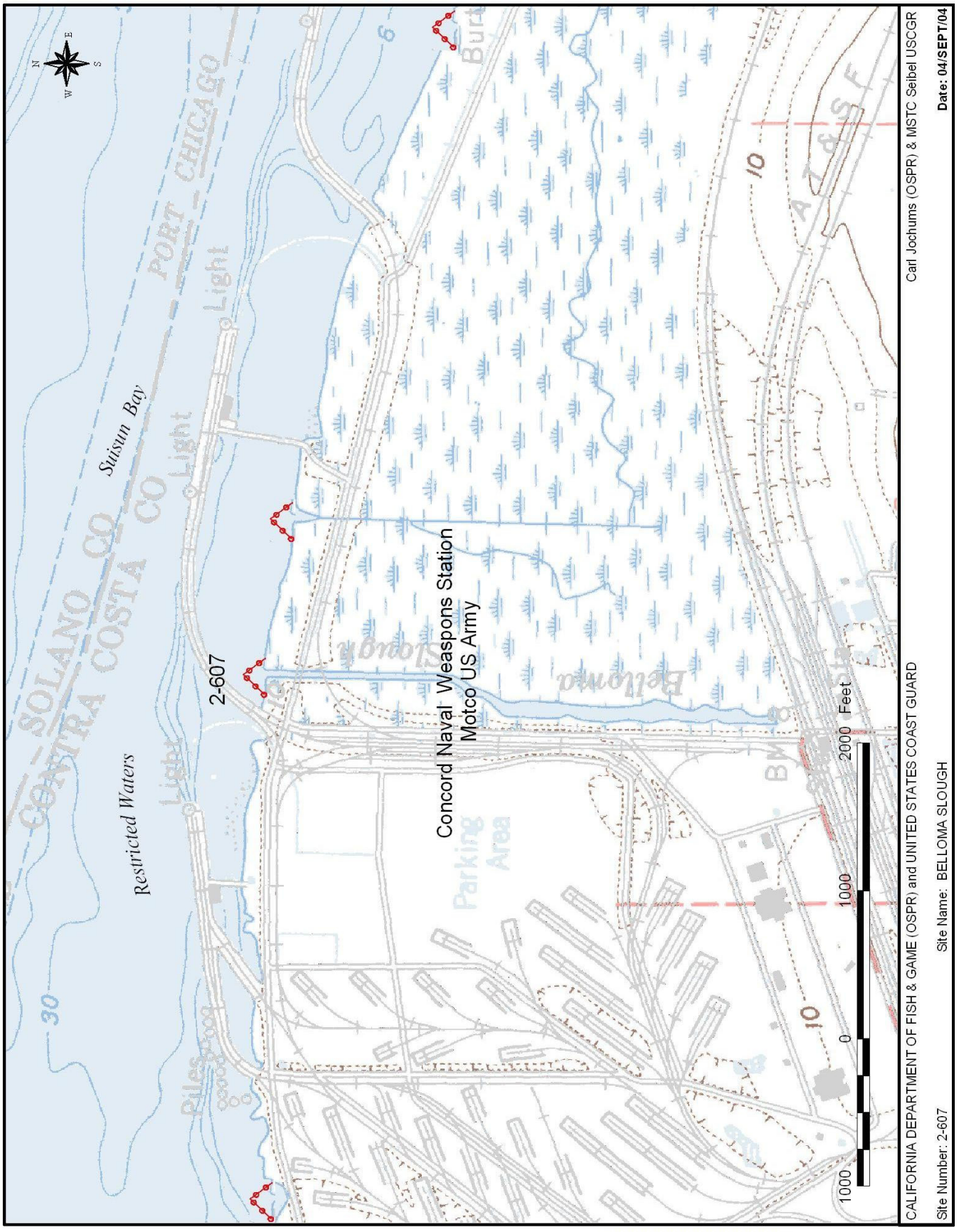
WATER LOGISTICS:
Limitations: depth, obstruction: very shallow
Launching, Loading, Docking and Services Available: Launch at USN CNWS tug dock, Martinez, McAvoy

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

Naval response resources at the Concord Naval Weapons Station may be available to dike or boom off the slough. Stage equip at Martinez, McAvoy's or Weapons Station.

COMMUNICATIONS PROBLEMS: none

ADDITIONAL OPERATIONAL COMMENTS:



Harbor Boom
Swamp Boom
sss / sfs

Sorbent Boom
Other Boom
tsa / sps

Dike or Berm
Excellcior Fence
tba/voo

2-608 -A Site Summary- Shore Acres Marsh 2-608 -A

		Thomas Guide Location	Latitude N	Longitude W
County:	Contra Costa		3 8 08	121 58.8
USGS Quad:	Honker Bay	NOAA Chart: SUISUN BAY 18658/18556/18656		

Last Page Update : 7/1/2005

SITE DESCRIPTION:

This site extends from McAvoys Marina west to General Chemical Plant (just east of the chemical plant at Middle Pt) and bounded on the south by the SP RR. There are two ownerships: California Department of Fish and Game owns the parcel next to the Marina and the US Navy Concord Weapons Station owns the parcel next to the chemical plant. This site is a combination of tidal and high marsh with both tule/cattails and pickleweed. It has an abrupt bank typical of eroding marsh front. Several finger sloughs carry tidal exchange to the back marsh. There are several dead-end sloughs. There is a channel along the shore front.

SEASONAL and SPECIAL RESOURCE CONCERN

These marshy areas have A-protection priority always. Migratory waterfowl and marsh birds use this area during winter months.

RESOURCES OF PRIMARY CONCERN

This site is predominantly pickleweed / spartina marsh, but there are substantial cattail and tule growths. And there are some ponded areas. The bayward eroding edge is habitat for Mason's lilaeopsis. The small tidal inlets admit tidal exchange to the back marsh and must be boomed to exclude oil from entering.

The marshy margins are prime marsh bird and waterfowl habitat including California clapper rail, Suisun song sparrow and black rail.

The saltmarsh harvest mouse has been found here. The emergent marshes are inhabited by semi-aquatic mammals such as river otter, raccoon, beaver and muskrat. Western pond turtle has been found here.

The emergent marshes here are typical tule-sedge mix with some cattail.

Several sensitive plants occur here: Mason's lilaeopsis, Suisun marsh aster, Delta tule pea.

CULTURAL, HISTORIC, and ARCHEOLOGICAL SENSITIVITIES

Contact the California Dept of Parks and Recreation - Office of Historic Preservation (Eric Allison -(916) 653-9125), and the Northwest Information Center, (Leigh Jordan, Sonoma State College ((707) 664-0880)) for specific information on historic or cultural resources in this area.

KEY CONTACTS: Trustee (T); Entry/Owner/Access (E); Cultural (C); or Other Assistance (O)

Type	Name / Title	Organization	Phone
B	Baylands Nature Preserve Office	Baylands Nature Preserve	(650) 329-2506
E/B	Laurie Briden	CA Dept of Fish & Game, Bay/Delta	(209) 955-7800
B	Brenda Grewell Restoration Ecologist	US Dept. of Agriculture	(530) 752-6260
TEL	Kent Nelson	CA Dept. of Water Resources	(916) 227-7581
E/B/L/C	Martin Vitz	East Bay Regional Park District	

ADDITIONAL SITE SUMMARY COMMENTS:

County and Thomas Guide Location	NOAA CHART	Latitude N	Longitude W
Contra Costa	SUISUN BAY 18658/18556/18656	3 8 08	121 58.8

Last Page Update : 7/1/2005

CONCERNS and ADVICE to RESPONDERS:

This is a sensitive saltmarsh with endangered plants and animals. Primary concern is to prevent oil from being carried into the marsh though tidal openings by using exclusion booming. Also of concern is oiling of the marsh front when tides flood the marsh front. Responders should make an effort to minimize trampling of vegetation and be aware that tiny endangered plants and animals are present. Also, don't trample oil into sediments.

HAZARDS and RESTRICTIONS:

There is a channel immediately along shore, but there is a bar farther out.

SITE STRATEGIES

Immediately along shore there is a channel which usually affords adequate depth for deployments.

Strategy 2-608.1 **Objective: Exclude oil from small tidal channels which admit oil to back marsh. Close dead-end sloughs to reduce oil margin impacts.** ACP DATE 9/4/1997

The tidal channels are very small. They are located about 100', 200', and 300' west from the west McAvoy entry. Each will require 25'of 4x4+ Hboom. Boom anchoring may be necessay (as opposed to staking) because bridging may admit oil at low flood. At the deadend slough near chemical plan, use 400' 4X4+ Hboom with stakes or anchors. Repeat deployment if currents or waves are likely to overtop boom. Leave trailing boom ends to insure a seal and prevent shortciruiting. Back with sorbant.

Strategy 2-608.2 **Objective: Deflect oil away from shoreline and into main channel. Deflect any by-passing oil to shore capture/collection.** ACP DATE 9/4/1997

a) From Middle Point deploy deflection boom at the best angle fend oil past marsh front and back into main channel.
b) Setup a deflection to shore and a shore skimming collection system at General Chemical shoreline to intercept any oil which escapes above deflection.

Strategy 2-608.3 **Objective: Marsh front protective booming: If there is threat of heavy oiling and saturation of the marsh front, and when usch use will not preclude defending other sites with Strategic Objectives 5 and 6 action (seek concurrence of the trustee stratigist).** ACP DATE 9/4/1997

When foregoing strategies are inadequate to keep oil off marshes, 8000 ft of harbor boom will be deployed along the entire marsh front to keep heavy oiling off the marsh. Multiple layers may be required if oil is washing over the first layer (second layer may then be swamp boom.) (This strategy can be found in Potential Oil-Spill Protection Strategies for San Francisco Bay, California. (Hayes and Montelo, 1994).)

Table of Response Resources

strategy number	harbor boom	swamp boom	Other boom type	sorb boom	Anchoring no	Anchoring type and gear	Boom boat	Skiffs punts	Skimmers No	Skimmers Type	Special Equipment No and kinds	staff deploy	Staff tend
2-608.1	0	500		500	10	10/3/danforths & stakes	1	1				3	
2-608.2	3000				18	18/22#+ danforths + 15' chains	3	2	1	SSS		11	
2-608.3	8000				10	10/22+/danforths & stakes	4	2				16	

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

This site can be reached taking the Bay Point (Willow Pass) exit from Hwy 4 and then to Port Chicago Highway: marsh access though a locked gate (This is Concord Naval Weapons Station property). Also, via the General Chemical Plant. By water, the site is immediately west of McAvoy's Marina. This site extends from McAvoys Marina west to General Chemical Plant (just east of the chemical plant at Middle Pt) and bounded on the south by the SP RR. There are two ownerships: California Department of Fish and Game owns the parcel next to the Marina and the US Navy Concord Weapons Station owns the parcel next to the chemical plant.

LAND ACCESS: ALL TYPES DEPENDING ON WEATHER

WATER LOGISTICS: none have been identified.
Limitations: depth, obstruction

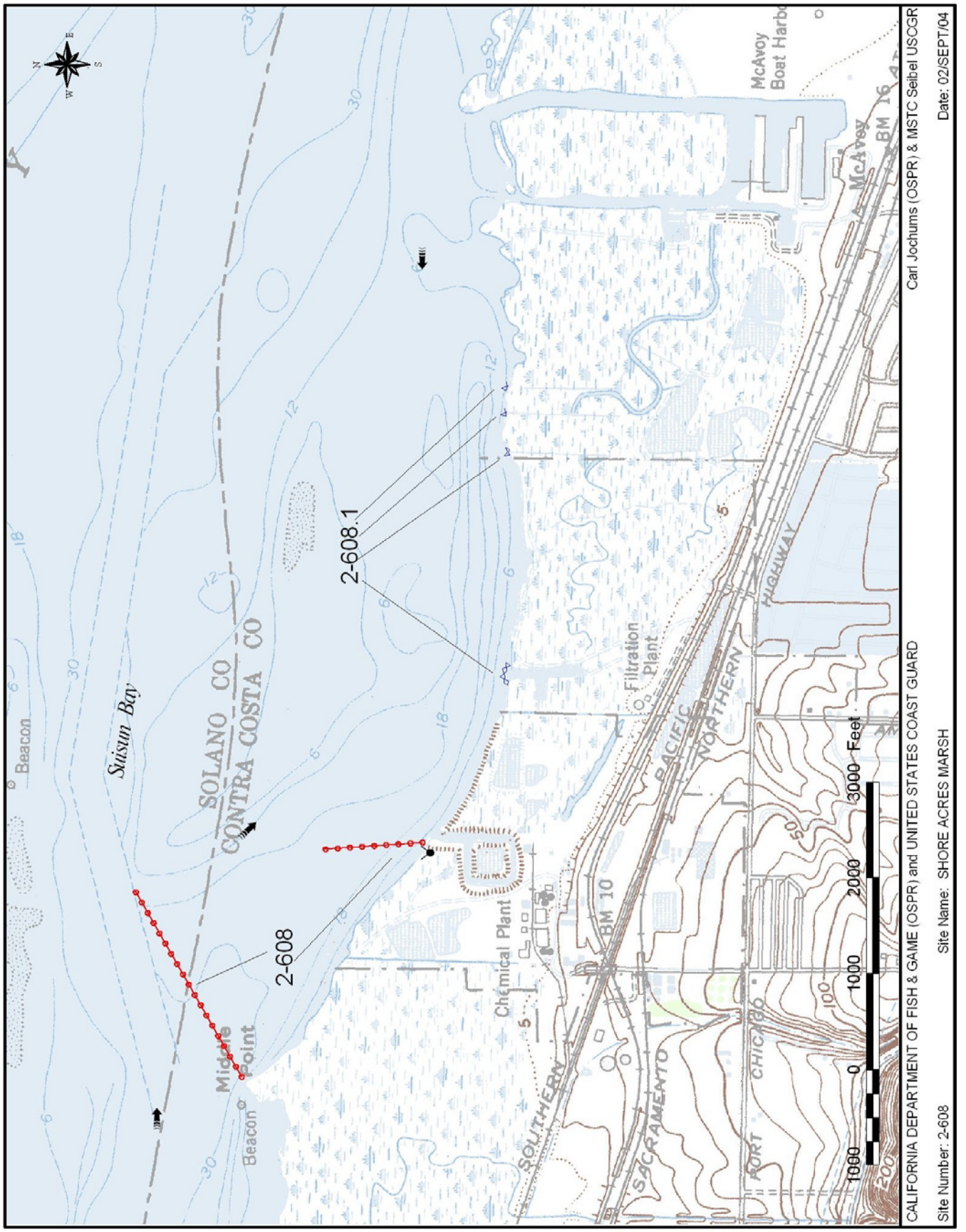
Launching, Loading, Docking and Services Available: McAvoy/Harris Marina at Bay Point is immediately to the east. Martinez Marina (9 mi. W). Pitsburg Marina (6 mi. E).

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

Deploy from Pittsburg, Martinez or McAvoy's marinas. McAvoy's is possible field post and staging / support site: all manner of facilities, except housing, are available, and area can be secured.

COMMUNICATIONS PROBLEMS: none

ADDITIONAL OPERATIONAL COMMENTS:



Harbor Boom
Swamp Boom
sss / sfs

Sorbent Boom
Other Boom
tsa / sps

Dike or Berm
Excellcior Fence
tba/voo

Thomas Guide Location	Latitude N	Longitude W
	38 03.5	122 06

County: Solano

USGS Quad: Benicia/Vine Hill

NOAA Chart: SUISUN BAY 18657/18652

Last Page Update : 9/4/1997

SITE DESCRIPTION:

This site is the shallow mud bar which begins a half mile east of the Benicia Bridge and continues to Roe Island. The shoal is an extensive mud-sand bar about a mile wide at its widest and over three miles long. Generally the sediments are firm and will support pedestrian activity. During high tides it is a navigational obstruction to all but shallow draft vessels, but during low tides extensive portions are exposed. Intertidal life here is variable depending on local salinity conditions. Waterfowl and shorebirds frequent this shoal to feed and loaf.

SEASONAL and SPECIAL RESOURCE CONCERN

This mudflat has B-level sensitivity when birds are using it for resting and foraging. Otherwise protection is C-level.

RESOURCES OF PRIMARY CONCERN

This is a firm sediment mud-sand bar which is habitat for eurihaline species of invertebrates. It is feeding habitat for fish and when exposed, is resting and feeding for waterbirds and shorebirds.

Waterfowl and shorebirds here are daily transients because it is covered with water for part of each day.

CULTURAL, HISTORIC, and ARCHEOLOGICAL SENSITIVITIES

Contact the California Dept of Parks and Recreation - Office of Historic Preservation (Eric Allison -(916) 653-9125), and the Northwest Information Center, (Leigh Jordan, Sonoma State College ((707) 664-0880)) for specific information on historic or cultural resources in this area.

KEY CONTACTS: Trustee (T); Entry/Owner/Access (E); Cultural (C); or Other Assistance (O)

Type	Name / Title	Organization	Phone
TB	Laurie Briden	CA Dept of Fish & Game, Bay/Delta	(209) 955-7800
T	Brenda Grewell Restoration Ecologist	US Dept. of Agriculture	(530) 752-6260
	Kent Nelson	CA Dept. of Water Resources	(916) 227-7581

ADDITIONAL SITE SUMMARY COMMENTS:

County and Thomas Guide Location	NOAA CHART	Latitude N	Longitude W
Solano	SUISUN BAY 18657/18652	38 03.5	122 06

Last Page Update :

CONCERNS and ADVICE to RESPONDERS:

Primary concern is oiling birds which rest and feed on this bar during low tide. Execution of the strategy is at the recommendation of the Wildlife Operations Branch Chief only.

HAZARDS and RESTRICTIONS:

The mudflat is very shallow and should be approached with caution, particularly on a falling tide.

SITE STRATEGIES

Strategy 2-630.1 Objective: Haze birds off exposed bar: Only at direction of Wildlife Branch Chief

ACP DATE 9/4/1997

This strategy may be executed at the direction of the Wildlife Branch Chief only. Stake and anchor 4 sonic devices along the bar. Attend regularly. Access at other than high tide may requirevery shallow draft vessel or airboat.

Table of Response Resources

strategy number	harbor boom	swamp boom	Other boom type	sorb boom	Anchoring no	Anchoring type and gear	Boom boat	Skiffs punts	Skimmers No	Skimmers Type	Special Equipment No	Special Equipment and kinds	staff deploy	Staff tend
2-630.1	0							1				4 hazinf devicies on flosting platforms	2	

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

There is no land access. Water access is one mile east from Benicia or Martinez marinas. This site is the shallow mud bar which begins a half mile east of the Benicia Bridge and continues to Roe Island.

LAND ACCESS: after arrival by boat, you can walk on bar.

WATER LOGISTICS: EXTREME SHALLOW DRAFT AT LOWER TIDES
Limitations: depth, obstruction

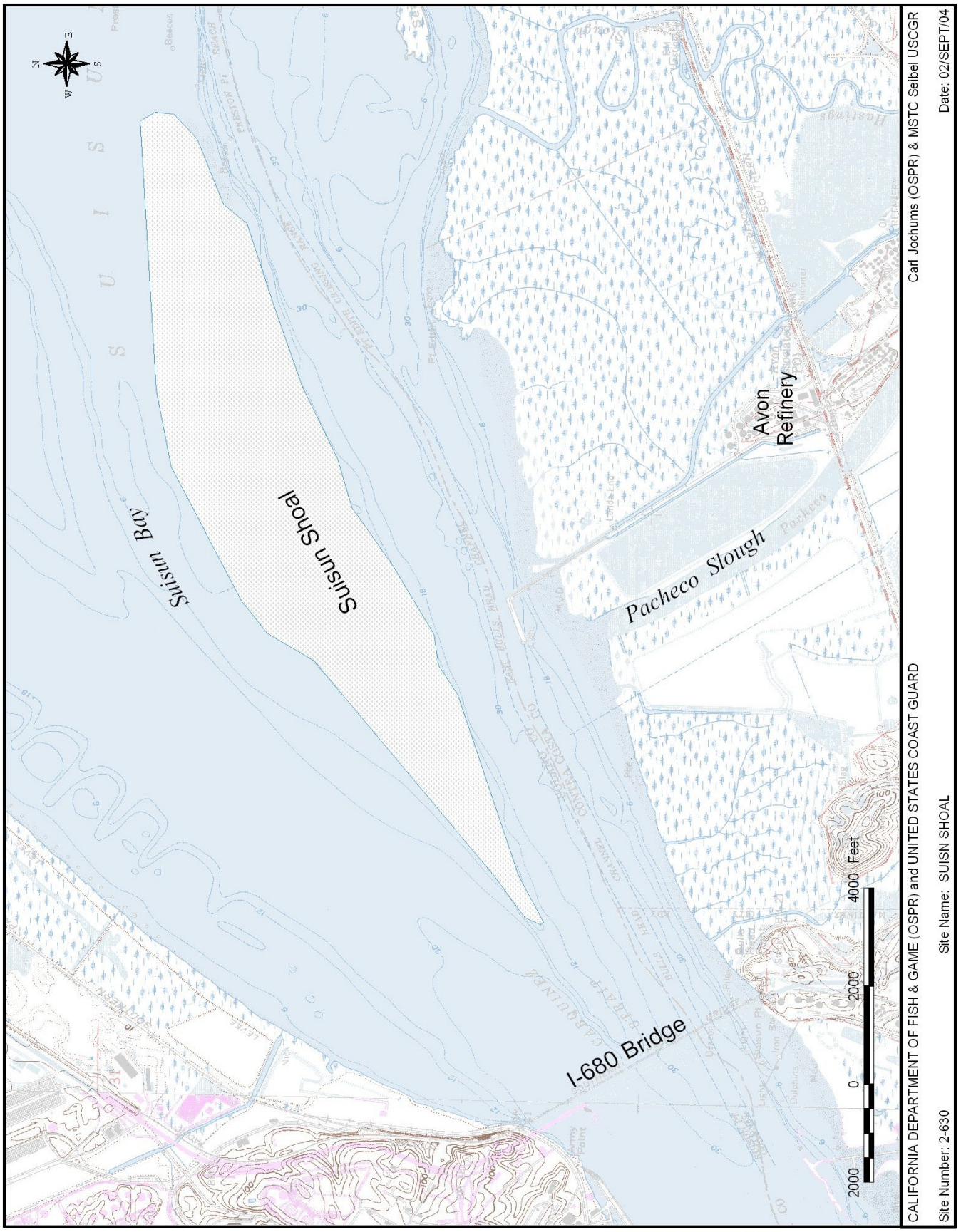
Launching, Loading, Docking and Services Available: Benicia and Martinez Marinas (1 mi. W).

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

Deploy from Martinez Marina, Benicia Marina or Benicia wharf.

COMMUNICATIONS PROBLEMS:

ADDITIONAL OPERATIONAL COMMENTS:



Harbor Boom
Swamp Boom
sss / sfs

Sorbent Boom
Other Boom
tsa / sps

Dike or Berm
Excellcior Fence
tba/voo

2-631 -A Site Summary- Roe Island 2-631 -A

		Thomas Guide Location	Latitude N	Longitude W
County:	Solano		3 8 04	122 02
USGS Quad:	Fairfield South, Vine Hill	NOAA Chart: 18656 Suisun Bay		

Last Page Update : 1/1/2000

SITE DESCRIPTION:

This site includes all of Roe Island and is US Navy property. Roe Island is a marshy island in Suisun Bay which is predominantly a high tidal marsh with high seasonal ponds, supporting a rich diversity of marsh plants. The island has never been diked. There are two tidal channels which enable circulate from Suisun Bay to the interior of the island with multiple branches and associated wetlands. There are shallow shoals on east and west ends. Protected margins and channels have emergent vegetation. Most of the shoreline is wave washed and eroding. Contact Concord Naval Weapons Station regarding access and biological information.

SEASONAL and SPECIAL RESOURCE CONCERN

The marsh is "A" priority all year. Sensitive species of plants and animals occur here.

RESOURCES OF PRIMARY CONCERN

The island has predominantly high marsh. Most of the shoreline is exposed to wave action and is eroding which are difficult to protect. The tidal channels can convey oil to interior areas. There are several areas around the island margin which are protected from aggressive waves and have emergent marsh vulnerable to oiling (northwest margin and east end.)

This site has diverse marsh breeding habitat for a variety of birds including the threatened black rail and the Suisun song sparrow. It is important also to migratory birds and waterfowl.

This is potential habitat for saltmarsh harvest mouse though there are no recorded collections.

Among the rich diversity of plant found here are the rare plants Mason's lileopsis and Delta tule pea.

CULTURAL, HISTORIC, and ARCHEOLOGICAL SENSITIVITIES

Contact the California Dept of Parks and Recreation - Office of Historic Preservation (Eric Allison -(916) 653-9125), and the Northwest Information Center, (Leigh Jordan, Sonoma State College ((707) 664-0880)) for specific information on historic or cultural resources in this area.

KEY CONTACTS: Trustee (T); Entry/Owner/Access (E); Cultural (C); or Other Assistance (O)

Type	Name / Title	Organization	Phone
	Peter Baye, Ph.D. Coastal Plant Ecologist		(415) 310-5109
	Baylands Nature Preserve Office	Baylands Nature Preserve	(650) 329-2506
	Brenda Grewell Restoration Ecologist	US Dept. of Agriculture	(530) 752-6260
	Grizzly Isl W/L Refuge	CA Dept. of Fish & Game	(707) 425-3828
	Jerry Karr	Audubon Society, Solano County Chapter	(707) 643-7089

ADDITIONAL SITE SUMMARY COMMENTS:

County and Thomas Guide Location	NOAA CHART	Latitude N	Longitude W
Solano	18656 Suisun Bay	3 8 04	122 02

Last Page Update : 7/1/2005

CONCERNS and ADVICE to RESPONDERS:

The prime concern is to exclude oil from entering the tidal channels which lead to the interior. Secondarily, deflect oil away from exposed shoreline where oil will be washed on shore. Minimize trampling of shoreline and marsh vegetation: very small endangered plants are all along the shoreline. This island supports rich and varied plants species, but its high elevation reduces risk of oil reaching the interior of the island except on very high tides.

HAZARDS and RESTRICTIONS:

Very shallow water around island limits access.

SITE STRATEGIES

Strategy 2-631.1 Objective: Exclude oil from entering tidal channels and penetrating interior of island.

ACP DATE 4/15/2002

There are two tidal channels which circulate to the interior of the island with multiple branches and associated wetlands. Exclude oil from tidal channel at Northwest margin by chevron exclusion boom.
a) At the most westerly at northwest side, use 500' swamp (river) boom in a chevron "V" backed with sorbent boom. Water in this area is very shallow: airboat, hovercraft or booming on very high tides will be necessary.
b) On the north side of the island at about the middle of the island, deploy 100 of 8X8+ harbor boom in an exclusion chevron "V" with ends well upstream and down stream from opening. There are pilings around the mouth, and water is fairly deep at and along this opening. Heavier anchors may be required here.

Strategy 2-631.2 Objective: Deflect booming at west end of island.

ACP DATE 1/1/2000

Deflection Booming: Deploy 3000 of harbor boom in a chevron near the west end to protect vulnerable and sensitive sites at the western end of the island by deflecting oil past the island to north and south. Use heavy anchors (75 lbs.) Deploy boom as close to island as possible: there is a relatively deep channel close to the west tip.

Table of Response Resources

strategy number	harbor boom	swamp boom	Other boom type	sorb boom	Anchoring no	Anchoring type and gear	Boom boat	Skiffs punts	Skimmers No	Skimmers Type	Special Equipment No	Special Equipment and kinds	staff deploy	Staff tend
2-631.1		600		300	6	3/12#+/danforths & stakes	0	1				very shallow boat, draft airboat or hoverc	2	
2-631.2	3000				7	7/75+/danforth + 20 heavy chain	3	1					9	

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

Access site only by water. Roe Island is located in Suisun Bay north of the USN Concord Naval Weapons Station and is USN property. This site includes all of Roe Island and is US Navy property.

LAND ACCESS: none, access by boat & foot traffic

WATER LOGISTICS: very shallow water at NW and E
Limitations: depth, obstruction

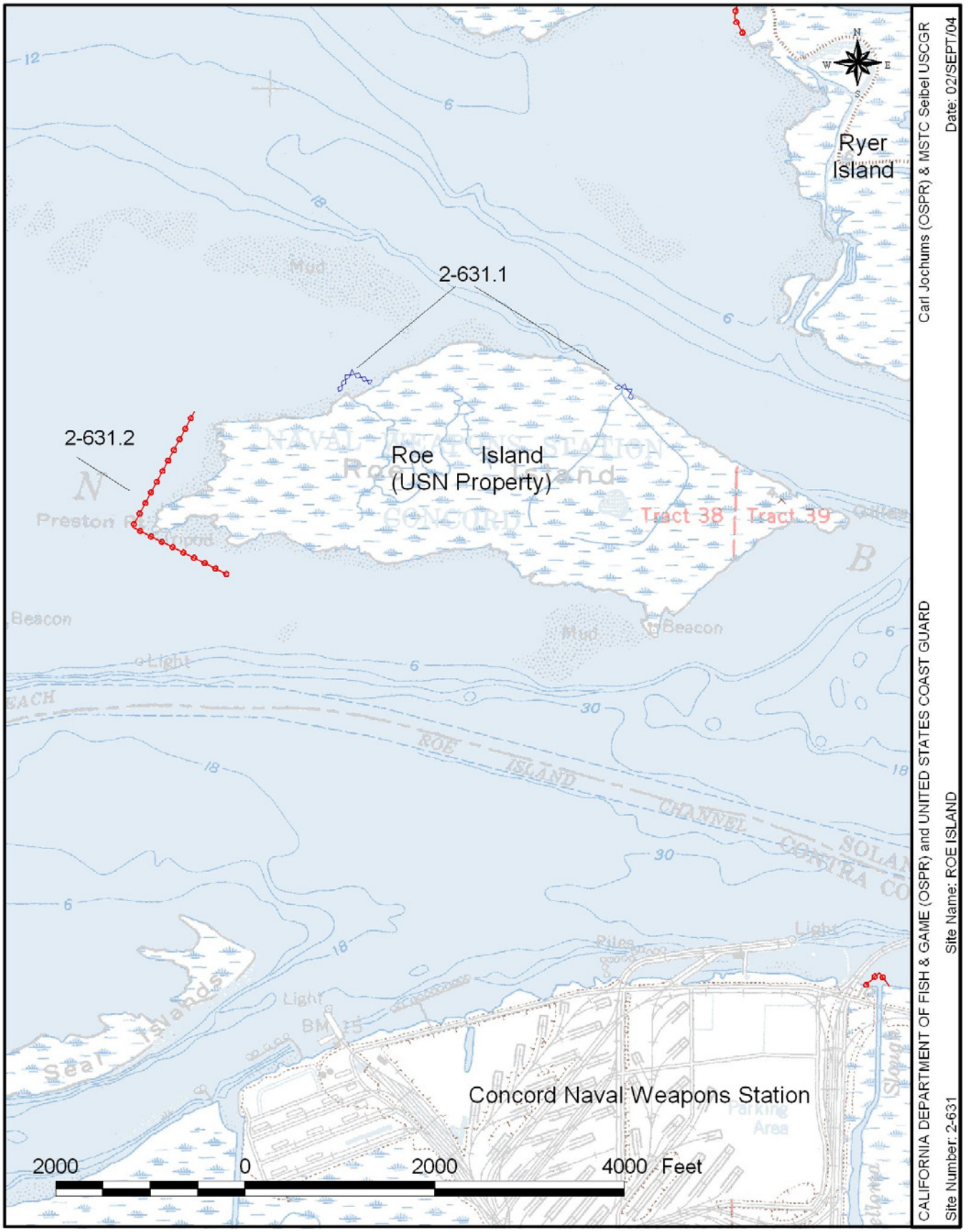
Launching, Loading, Docking and Services Available: Launching at Martinez, Benicia and McAvoy-Harris' Marinas in Bay Point , with boat services. Launch only at Tosco - Pacheco Creek and Concord Navel Weapons Station (tug wharf) by consent only.

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

Deploy from Martinez Marina, Benicia Marina or from McAvoy/Harris' Yacht at Bay Point (West Pittsburg) depending on the zone of inpacts and response activity.

COMMUNICATIONS PROBLEMS: none

ADDITIONAL OPERATIONAL COMMENTS:



Harbor Boom
Swamp Boom
sss / sfs

Sorbent Boom
Other Boom
tsa / sps

Dike or Berm
Excellcior Fence
tba/voo

Thomas Guide Location	Latitude N	Longitude W
	3 8 05	122 02

County: Solano

USGS Quad: Vine Hill

NOAA Chart: 18656 Suisun Bay

Last Page Update : 1/1/2000

SITE DESCRIPTION:

This site includes all of Ryer Island and is a property of the US Navy. This marshy island in Suisun Bay is divided in two parts by a channel. The western end of the island is a high tidal marsh and supports a rich diversity of native marsh plants. It has never been diked or channelized. The west-most tip is wave eroded and is used occasionally as a haulout by harbor seals.

The eastern three-fourths of the island was once diked, and the interior of the island subsided. The dikes are now broken in several places, and because of the subsidence, strong tidal currents fill and empty the interior with every tide. This eastern portion is a flooded maze of tule pockets and channels with a large deep channel running east-west. The outer perimeter of the island has complicated shoreline of small marshy islands and barrow channels. There are mature trees on the levees particularly at the east end.

SEASONAL and SPECIAL RESOURCE CONCERN

The marsh is "A" priority all year. Sensitive plant and animal species occur here throughout the year.

RESOURCES OF PRIMARY CONCERN

This island has several different habitats which are vulnerable to oil impacts and collateral impacts from response. The west end and the fragmented pieces left when barrow channels were excavated, high marsh habitat. This high marsh is almost undisturbed and uncommon habitat which sustains many native species. The high ground of the levees are upland habitat. The upland sustains shrubs and trees which is uncommon habitat for bird and mammals in the middle of Suisun marsh. Both the high marsh and upland are unlikely to sustain direct oil impacts due to elevation, but are vulnerable at their emergent edges and are vulnerable to trampling, activity and noise disruptions during response. The margins and interior provide extensive emergent marsh. The interior of the east portion is patches of emergent tules and convoluted channels.

The area is important to migratory waterfowl. It is also prime breeding habitat for marsh birds. Threatened bird species occur here including black rails, endangered California clapper rails, salt marsh common yellowthroat and Suisun song sparrow. A great diversity of passerines and raptors including perigren falcons use this area as winter habitat.

There is a full suite of aquatic mammals residing here, including the endangered saltmarsh harvest mouse. The westmost tip is occasionally used as a haulout by harbor seals.

Among the rich variety of flora occurring here are rare plants, including Mason's lileopsis and Delta tule pea.

CULTURAL, HISTORIC, and ARCHEOLOGICAL SENSITIVITIES

Contact the California Dept of Parks and Recreation - Office of Historic Preservation (Eric Allison -(916) 653-9125), and the Northwest Information Center, (Leigh Jordan, Sonoma State College ((707) 664-0880)) for specific information on historic or cultural resources in this area.

KEY CONTACTS: Trustee (T); Entry/Owner/Access (E); Cultural (C); or Other Assistance (O)

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B		Empty	
B	Peter Baye, Ph.D. Coastal Plant Ecologist		(415) 310-5109
TB	Laurie Briden	CA Dept of Fish & Game, Bay/Delta	(209) 955-7800
B	Brenda Grewell Restoration Ecologist	US Dept. of Agriculture	(530) 752-6260
T/B	Kathy Hieb Senior Fisheries Biologis	CA Dept. of Fish & Game, Bay/Delta	(209) 948-6078
B	Niall F. McCarten, Ph.D.	Jones & Stokes Associates, Inc.	(916) 737-3000

ADDITIONAL SITE SUMMARY COMMENTS:

County and Thomas Guide Location	NOAA CHART	Latitude N	Longitude W
Solano	18656 Suisun Bay	3 8 05	122 02

Last Page Update : 7/1/2005

CONCERNS and ADVICE to RESPONDERS:

The main concern is the potential for oil to be carried into the interior of the islands particularly eastern Ryer Island: on east Ryer there is a strong flood flow into the island though openings on the north, the south, the east and the west. The north opening and west opening are most likely to have oil entries. Also of concern is the oiling of the emergent vegetation on the margins and surrounding small islands: closing sloughs and openings will reduce the amount of marsh exposed. There are rare plants and threatened species here; so avoid trampling vegetation and trampling oil into sediments.

HAZARDS and RESTRICTIONS:

There are extreme shallows and obstructions around these islands.

SITE STRATEGIES

Strategy 2-632.1 **Objective: Exclude oil from entering east section of Island though levee breaks and penetrating the west section interior via tidal inlets.** ACP DATE 4/15/2002

Primary concern is excluding oil from east Ryer Island. West Ryer Island should come after. Most actions require very shallow operations, and at least one very shallow draft boom boat is necessary. Target time is 2 hours for deployment:

On east Ryer Island are four major openings and plus some smaller inlets.

a) North off Suisun Cut: Use chevron configuration (600' 9X9+ Hboom with 3 22#+ anchors and stakes) to exclude oil from a large gap in the levee. There are four narrow opening to the east of the break, each requiring 100' of 4X4+ and 1/5#+ anchors and stakes each. Back with sorbent (1000')

-The cross cut island cut may need booming at north end: 200' of 9X9 at the north end. 200' sorbent.

b) West end: All require very shallow operations. Back with sorbent 500.

- Exclude oil from two small opening just east of cross island channel 50' and 100' of 4X4+ each with 1- 5#+ anchor and stakes in a chevron "V" exclusion. Set "V" apex and stakes as far from current opening as possible.
- Exclusion chevron "V" in the larger channel immediately to south, with 350' 9X9+ Hboom with 22#+ anchors & stakes.
- 100 yds south of that location is an opening between along-shore islands, boom with 100' 4X4 river (swamp) boom staked in place. (no sorbent necessary.)

c) South shore: two openings - a wide funnel opening fronted with pilings and submerged pilings: deploy Chevron "V" exclusion with 400' 9X9+ Hboom with anchors to keep boom off the pilings. Back with 200' sorbent. Exclude oil from second opening about 200 yds east: 100' 4X4+ boom. Back with 50' sorbent.

d) East end: Chevron "V" exclusions of four openings though outer fringe islands: two most easterly opening 350' and 150' 9x9+ (both with 22# danforths), two south easterly side 150' and 150' of 4X4+ boom (both with 5#+ mid channel anchors). Back with 600' sorbent.

On west Ryer Island are four tidal inlets. These require extremely shallow operations.

e) Near the northwest tip just east of Garnett Pt is a funnel mouth slough: 200' 4X4+ swamp (river) boom staked in place and 100' sorbent.

f) on the south side, Chevron "V" exclusions using 4X4+ boom - 150' at the cross island cut and slough immediately to the west and further west 100' at each of two other sloughs. Back with sorbent.

Strategy 2-632.2 **Objective: Deflect oil away from seal haulout at northwest tip.** ACP DATE 1/1/2000

deflect oil past north west tip using 400' of 9X9+ Hboom. At least four heavy anchors will be necessary to hold the boom in position in this wave washed area.

Strategy 2-632.3 **Objective: Reducing south shore impacts by closing barrow channel inlets.** ACP DATE 1/1/2000

Closing barrow channel inlets can reduce oil exposure to the south margin by about 1/2. If oil is likely to impact south side of Ryer Island, close openings to barrow channels. 3000' 4x4+ boom with stakes and occasional anchors.

Table of Response Resources

strategy number	harbor boom	swamp boom	Other boom type	sorb boom	Anchoring no	Anchoring type and gear	Boom boat	Skiffs punts	Skimmers No	Skimmers Type	Special Equipment No and kinds	staff deploy	Staff tend
2-632.1	2200	1700		3000	30	15/22#+& 15/5#+/danforth, 80 stakes	4	3			1 very shallow draft boats & 18 flags	18	
2-632.2	400				4	4/22+/danforhts + 20'+ chain						3	
2-632.3	0	3000			5	5/12+/ anchors + 40 stakes	1	1			boats - very shallow draft	4	

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

There is no land access. By water, Ryer Island is located about a mile north of the Naval Weapons Stations piers in Suisun Bay. The Island is about six miles northeast from Martinez and about four miles northwest from McAvoy's. North and south margins are deep. Wherever channels cross old levee, there are obstructions. Interior channels are all very shallow but may be traversed with outboards when tides high. This site includes all of Ryer Island and is a property of the US Navy.

LAND ACCESS: foot traffic only and extremely difficult

WATER LOGISTICS: North and south margins deep;channels shallow & obstructions
Limitations: depth, obstruction

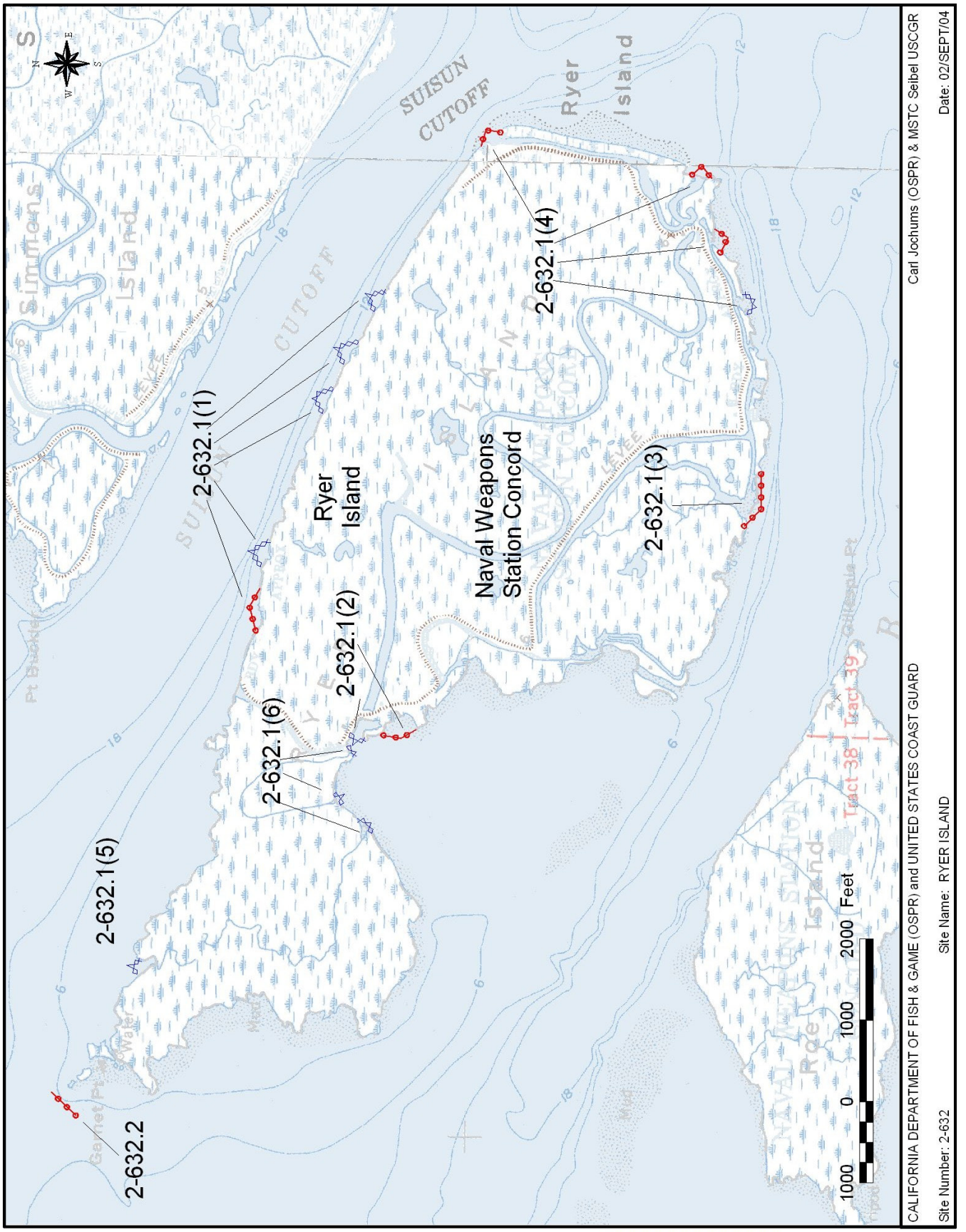
Launching, Loading, Docking and Services Available: Nearest launch is McAvoys (4 miles) or Martinez -Benicia (7 miles). All have good services.

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

Either Martinez, Benicia, or McAvoys (Bay Point) have good facilities for field outposts. All have good support and security potential. Martinez has widest variety of support services.

COMMUNICATIONS PROBLEMS: none

ADDITIONAL OPERATIONAL COMMENTS:


SUISUN CUTOFF
Ryer Island
Simmons Island
Naval Weapons Station Concord
2-632.1(1)
2-632.1(2)
2-632.1(3)
2-632.1(4)
2-632.1(5)
2-632.1(6)
2-632.2
Tract 38
Tract 39
1000 0 1000 2000 Feet
CALIFORNIA DEPARTMENT OF FISH & GAME (OSPR) and UNITED STATES COAST GUARD
Carl Jochums (OSPR) & MSTC Seibel USCGR
Date: 02/SEPT/04
Site Number: 2-632
Site Name: RYER ISLAND
Harbor Boom
Swamp Boom
sss / sfs
Sorbent Boom
Other Boom
tsa / sps
Dike or Berm
Excellcior Fence
tba/voo

2-633 -A Site Summary- Middle Ground Island

2-633 -A

		Thomas Guide Location	Latitude N	Longitude W
County:	Solano		38 03.7	121 59
USGS Quad:	Honker Bay	NOAA Chart:	SUISUN BAY 18656/18657/18658	

Last Page Update : 9/4/1997

SITE DESCRIPTION:

This site is an island in the middle of Suisun Bay between Roe Island and Chipps Island. It is Concord Naval Weapons Station Property. This low island is surrounded by marshy margins. It is the east tip of a long mud shoal named Middle Ground. The west and north side have extremely shallow waters. The south side along the main channel has pilings. The east tip is wave-washed beach.

SEASONAL and SPECIAL RESOURCE CONCERN

All marshes have A-protection priority at all times.

RESOURCES OF PRIMARY CONCERN

This is a sandy/mud emerging bar with extensive tule margins on west and east which are suitable for marsh birds and waterfowl. Its size and isolation result in transient use for many species.

The marshy margins are prime marsh bird and waterfowl habitat. No sensitive bird species have been recorded here.

The emergent marshes here are typical tule-sedge mix.

Several sensitive plants may occur here: Mason's lilaeopsis, Suisun marsh aster.

CULTURAL, HISTORIC, and ARCHEOLOGICAL SENSITIVITIES

Contact the California Dept of Parks and Recreation - Office of Historic Preservation (Eric Allison -(916) 653-9125), and the Northwest Information Center, (Leigh Jordan, Sonoma State College ((707) 664-0880)) for specific information on historic or cultural resources in this area.

KEY CONTACTS: Trustee (T); Entry/Owner/Access (E); Cultural (C); or Other Assistance (O)

Type	Name / Title	Organization	Phone
TB	Laurie Briden	CA Dept of Fish & Game, Bay/Delta	(209) 955-7800
B	Phillis Faber		
B	Brenda Grewell Restoration Ecologist	US Dept. of Agriculture	(530) 752-6260
B	Kent Nelson	CA Dept. of Water Resources	(916) 227-7581
BLE	Richard Pieper Director	US Navy, Concord Naval Weapons Station, Environ	(925) 246-4011

ADDITIONAL SITE SUMMARY COMMENTS:

County and Thomas Guide Location	NOAA CHART	Latitude N	Longitude W
Solano	SUISUN BAY 18656/18657/18658	38 03.7	121 59

Last Page Update :

CONCERNS and ADVICE to RESPONDERS:

The strategy is intended to protect this marshy island by deflecting oil away. Responders should avoid trampling vegetation because rare plant species are present. Avoid trampling oil into sediments.

HAZARDS and RESTRICTIONS:

The south side has pilings and submerged pilings. The north and west side are extremely shallow: the island is the emergent tip of a shallow mud bar.

SITE STRATEGIES

Strategy 2-633.1 Objective: Flood tide deflection if oil threatens from SW.

ACP DATE 9/4/1997

Deploy 1500'8X8+ deflection boom SW from the island with a slight deflection to move oil past island and back into channel.

Strategy 2-633.2 Objective: Flood tide deflection if oil threatens from NW.

ACP DATE 9/4/1997

Deploy 1500' 4X4+ north and northeast to deflect oil past island and back into north channel. Stake and anchor in place. This area is extremely shallow and only very shallow draft vessels can deploy here and deployment should be scheduled for high tides.

Table of Response Resources

strategy number	harbor boom	swamp boom	Other boom type	sorb boom	Anchoring no	Anchoring type and gear	Boom boat	Skiffs punts	Skimmers No	Skimmers Type	Special Equipment No and kinds	staff deploy	Staff tend
2-633.1	1500				4	4/22#+ danforths & chain	2	1				8	
2-633.2	0	1500			4	4/12+/danforhs & stakes	1	2				7	

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

There is no land access. Water access only: the site is one mile northwest from McAvoy's Marina at channel marker G 21. This site is an island in the middle of Suisun Bay between Roe Island and Chipps Island. It is Concord Naval Weapons Station Property.

LAND ACCESS: no land access. foot traffic at site only.

WATER LOGISTICS:
Limitations: depth, obstruction: Extreme shallows. Beware of pilings.

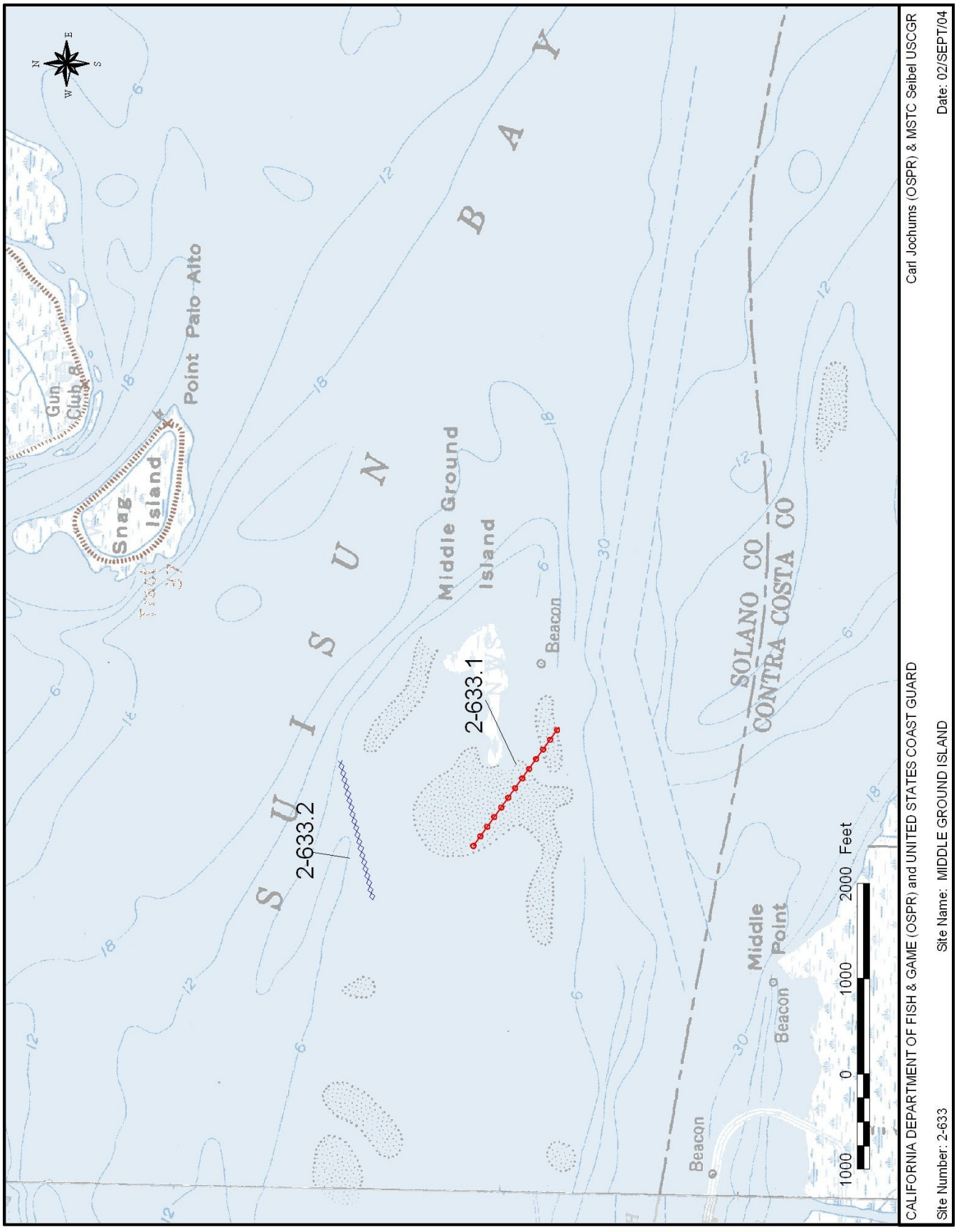
Launching, Loading, Docking and Services Available: McAvoy/Harris Marina at Bay Point is immediately to the east. ġ□Martinez Marina (9 mi. W). Pittsburg Marina (6 mi. E).

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

Deploy from Pittsburg, Martinez or McAvoy's marinas. McAvoy's is possible field post, as well as a resupply point. All manner of facilities, except housing, are available. Area can be secured.

COMMUNICATIONS PROBLEMS:

ADDITIONAL OPERATIONAL COMMENTS:



Harbor Boom
Swamp Boom
sss / sfs

Sorbent Boom
Other Boom
tsa / sps

Dike or Berm
Excellcior Fence
tba/voo

2-651 -A Site Summary- Southampton Bay 2-651 -A

		Thomas Guide Location	Latitude N	Longitude W
County:	Solano		3 8 04	122 11
USGS Quad:	Benicia	NOAA Chart: 18656 Suisun Bay		

Last Page Update : 7/1/2005

SITE DESCRIPTION:

The site extends from Dillon Point to the unnamed point (with dwellings) just west of Commodore Jones Point. Most of the site is Southampton State Park though some is in private or roadside right-of-way in the most easterly portion. Southampton Bay is shallow bay open to Carquinez Strait with a large prograding wetland. The bay is very shallow and is an extensive mudflat at low tides. The margin of the bay is tule-sedge. The back marsh is saltgrass and pickleweed grading to freshwater marsh in those portions receiving freshwater flow from the surrounding drainage and creek. Remnants dikes in the easterly mudflats are covered with water except at low tides.

SEASONAL and SPECIAL RESOURCE CONCERN

The marshes are an "A" priority all year.

RESOURCES OF PRIMARY CONCERN

This is a large tidal marsh (80+ acres) fed by a stream from land and a tidal slough. The marsh is saltmarsh in the front and freshwater marsh in the rear. There is high ground around the margins. The entire marshfront has extensive mudflats which are exposed for a hundred+ yards at lower tides.

The marshes are habitat for the endangered California clapper rail, the threatened California black rail. This is breeding habitat and wintering habitat for many species. In the winter, cavasback ducks are common.

The endangered salt marsh harvest mouse probably occurs here.

CULTURAL, HISTORIC, and ARCHEOLOGICAL SENSITIVITIES

Contact the California Dept of Parks and Recreation - Office of Historic Preservation (Eric Allison -(916) 653-9125), and the Northwest Information Center, (Leigh Jordan, Sonoma State College ((707) 664-0880)) for specific information on historic or cultural resources in this area.

KEY CONTACTS: Trustee (T); Entry/Owner/Access (E); Cultural (C); or Other Assistance (O)

Type	Name / Title	Organization	Phone
L	City Of Benicia	Benicia, City of	
ELBO	Benicia State Recreation Park HQ	CA Dept. of Parks & Recreation	(707) 938-1519
B	Phillis Faber		
B	Brenda Grewell Restoration Ecologist	US Dept. of Agriculture	(530) 752-6260
B	Jerry Karr	Audubon Society, Solano County Chapter	(707) 643-7089

ADDITIONAL SITE SUMMARY COMMENTS:

County and Thomas Guide Location	NOAA CHART	Latitude N	Longitude W
Solano	18656 Suisun Bay	3 8 04	122 11

Last Page Update : 7/1/2005

CONCERNS and ADVICE to RESPONDERS:

This very shallow bay has extensive sensitive marshy shoreline, which if oiled, would be nearly impossible to clean or rehabilitate. The intent is to keep oil out of the bay by deflection or, failing that, by exclusion/protection booming along the marshfront. Respond in shallows only at high tide with very shallow boats or airboat/hovercraft. Avoid trampling vegetation and beware of trampling oil into muds. This is a state park.

HAZARDS and RESTRICTIONS:

The bay is extremely shallow at its margins and recesses. There is a remnant of an old dike extending from the land to the east side of the bay (near the dwellings). Aircraft beware of high power wires in the area.

SITE STRATEGIES

Strong currents flow close to shore at Dillon Pt. An eddy often forms just west of Dillon Pt. Waters in the Strait are very deep. In the bay, waters near shore are very shallow: note hazards.

Strategy 2-651.1 Objective: On Flood tide, deflect boom past the site on the current contour line.

ACP DATE 7/10/1996

Deflection Booming: To keep oil in the main channel where it is accessible to the skimmers, deploy 1200 ft of deflection boom extending easterly along the 20 foot isobath from Dillon Point to deflect oil away from Southampton Bay and back into Carquinez Strait on the flood tide. Deflection boom should also be deployed to the east of Southhampton Bay to deflect oil away from the Bay and into Carquinez Strait during the ebb tide. Benicia Point appears to be a logical location from this boom. Recommended 600 ft of boom be deployed along the southeast side of the islands off this point and extend 600 ft northwesterly (285-T) from Daymark #23 along the 20 foot depth line.

Strategy 2-651.2 Objective: Protective booming of marshy exposure. The main focus of protection should be the inner marsh.

ACP DATE 7/1/1996

Deploying swamp boom (4x4+) deep into Southhampton Bay with shallow water craft. In addition, an alternate strategy would be to deploy exclusion boom (swamp boom or tidal barrier boom) between the vicinity of Dillon Point and the eastern shore of Southhampton Bay. It is estimated that 3.200 to 5,000 ft of boom would be required to exclude oil from the wetlands of Southhampton Bay. A strategy for deployment of exclusion boom can be found in Potential Oil-Spill Protection Strategies for San Francisco Bay, California (Hayes and Montello, 1994)

Strategy 2-651.3 Objective: Shoreline containment and recovery with shoreside skimming

ACP DATE 7/1/1997

The small cove immediately west of Dillon Pt. appears to be a potential containment and recovery site. Oil and debris on the gravel beach indicate it is a natural collection point, and there is vehicle access to the beach. To assist natural collection at this point, 300 ft of deflection boom extending westerly from Dillon Pt. (Daymark #21) during the flood tide or easterly from the small unnamed point approximately 1000 ft west on the ebb may be beneficial. These short lengths of boom should be set so as to direct oil into the cove. Oil may be recovered from the water with a Shoreside Skimming System (SSS) such as an oil-mop skimmer and pumped to a fast tank on beach or other methods.

Table of Response Resources

strategy number	harbor boom	swamp boom	Other boom type	sorb boom	Anchoring no	Anchoring type and gear	Boom boat	Skiffs punts	Skimmers No	Skimmers Type	Special Equipment No and kinds	staff deploy	Staff tend
2-651.1	1200				3	3/22+/danforths + chain	2					6	
2-651.2	0	5000		3000	6	6/22+/danforhts + chain & stakes	3	2			Bboats: very shallow draft	13	
2-651.3	300				2	2/22+/danforth + chain	1	1	1	SSS		4	

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

By boat, proceed 3 miles west from Martinez Marina. By land, take the Columbus Parkway Exit off Hwy 780 and drive into Southampton Bay State Park on the south side of the freeway. There is a park roadway that goes to Dillon point. The site extends from Dillon Point to the unnamed point (with dwellings) just west of Commodore Jones Point. Most of the site is Southampton State Park though some is in private or roadside right-of-way in the most easterly portion.

LAND ACCESS: paved road around perimeter. Foot only in marsh.

WATER LOGISTICS: Extremely shallow and obstructions
Limitations: depth, obstruction

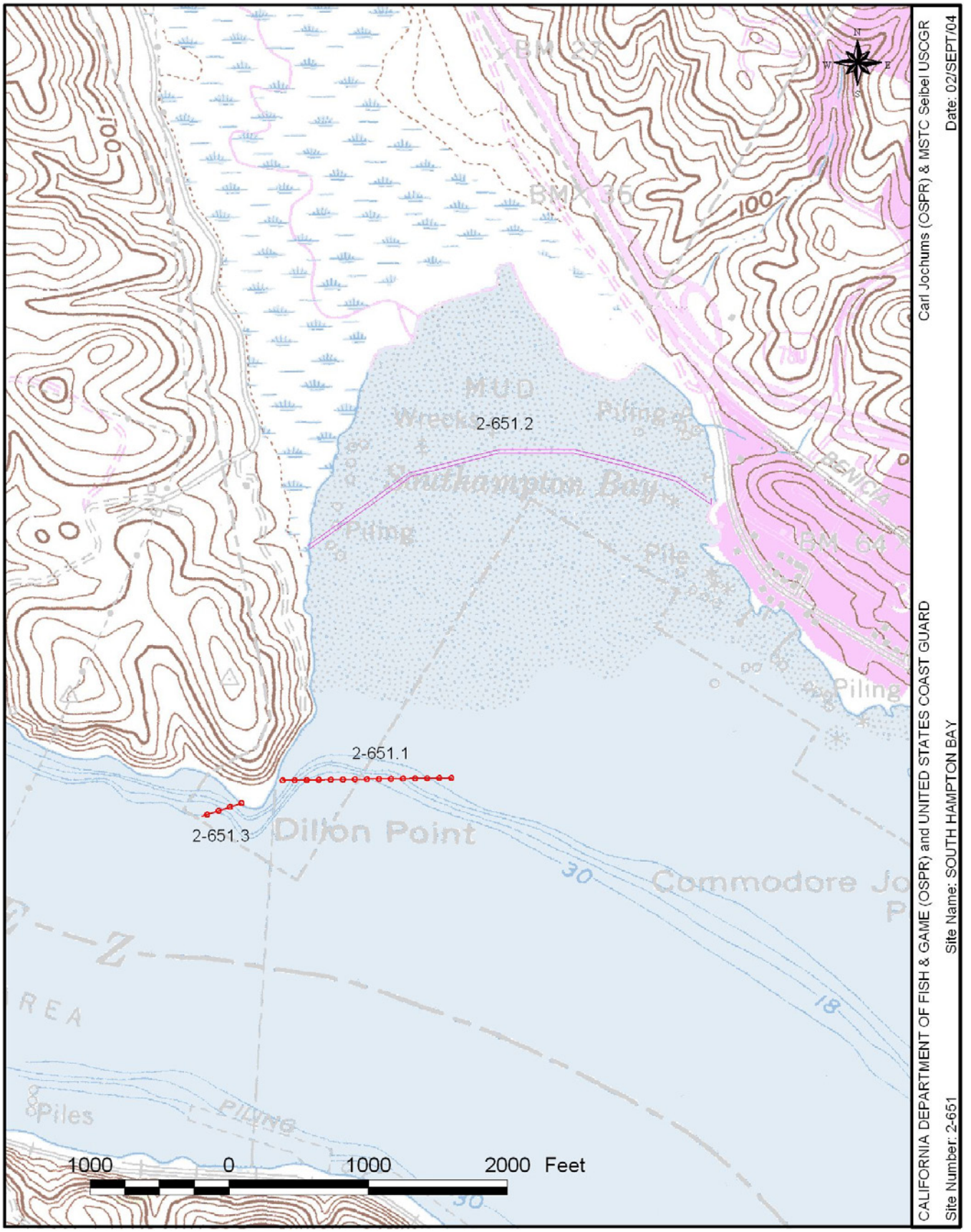
Launching, Loading, Docking and Services Available: Nearest launch is at Benicia public ramp 1/4 th mile east. Launch, fuel, boat services, moorage at nearby marinas at Martinez, Benicia, Crockett.

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

Staging locales: on-site at Dillon Pt, or Benicia public boat ramp. Staging areas at Benicia, Martinez, Exxon Wharf. Support services: lodging and food available at Martinez or Benicia.

COMMUNICATIONS PROBLEMS: none known

ADDITIONAL OPERATIONAL COMMENTS:



Harbor Boom
Swamp Boom
sss / sfs

Sorbent Boom
Other Boom
tsa / sps

Dike or Berm
Excellcior Fence
tba/voo

2-652 -A Site Summary- Benicia Marsh

2-652 -A

		Thomas Guide Location	Latitude N	Longitude W
County:	Solano		38 02.7	122 09.7
USGS Quad:	Benicia	NOAA Chart: SUISUN BAY 18657/18652		

Last Page Update : 7/1/2005

SITE DESCRIPTION:

This site extends from the foot First Street, Benicia, and continues to the east to the Benicia Warf. The site is on both sides of the Benicia Marina. This is an elongated pickleweed-saltgrass marsh. The front of the marsh has a beach berm which separates the marsh behind from all but highest tides. Tidal exchange volume is small. There are several small tidal inlets which are mostly obstructed with vegetation. There is also a tide gate on the marina breakwall which admits tidal exchange to the marsh from the marina to the tug pier at 5th Street. The marsh front is sedge mix; the main marsh is saltgrass and pickleweed. Ownerships include City and private holdings.

SEASONAL and SPECIAL RESOURCE CONCERN

Marshy areas have A-protection priority at all times.

RESOURCES OF PRIMARY CONCERN

The outer marsh margin is a storm berm which has mostly sedges and rushes. The back marsh is mostly pickleweed with saltgrass. The outer margin is a combination of wave-washed eroded shoreline and pocket beaches. About half the shoreline has shallow tidal flats, particularly the east half.

The marshy margins and inner marsh are habitat for marsh bird and waterfowl year-round. Suisun song sparrow and Suisun common yellowthroat have been found in this vicinity. There are always about a hundred mallard ducks and a dozen Canada geese present at the west end. During the winter, there are typically 400-1000 golden eye and scaup species and other water birds rafting between the tug dock and the wharf.

Typical semi-aquatic marsh mammals use this area. Saltmarsh harvest mouse may occur here.

Sensitive plants may occur here: Suisun marsh aster.

CULTURAL, HISTORIC, and ARCHEOLOGICAL SENSITIVITIES

Contact the California Dept of Parks and Recreation - Office of Historic Preservation (Eric Allison -(916) 653-9125), and the Northwest Information Center, (Leigh Jordan, Sonoma State College ((707) 664-0880)) for specific information on historic or cultural resources in this area.

KEY CONTACTS: Trustee (T); Entry/Owner/Access (E); Cultural (C); or Other Assistance (O)

Type	Name / Title	Organization	Phone
LE	City Of Benicia	Benicia, City of	
LE	Laurie Briden	CA Dept of Fish & Game, Bay/Delta	(209) 955-7800
B	Brenda Grewell Restoration Ecologist	US Dept. of Agriculture	(530) 752-6260
B	Kent Nelson	CA Dept. of Water Resources	(916) 227-7581
B	Mary Shaw	CA Native Plant Society, Solano President	(707) 747-5481

ADDITIONAL SITE SUMMARY COMMENTS:

County and Thomas Guide Location	NOAA CHART	Latitude N	Longitude W
Solano	SUISUN BAY 18657/18652	38 02.7	122 09.7

Last Page Update : 7/1/2005

CONCERNS and ADVICE to RESPONDERS:

Primary concern is transport of oil to inner marsh and oiling of emergent marsh front. The strategy is to close the few small tidal inlets. If oil is crowded along shore, the marsh front may need protective booming or be used to collect at the designated locales. Avoid trampling marsh vegetation or tracking oil into marsh front or sediments.

HAZARDS and RESTRICTIONS:

This shoreline is shallow and has obstructions.

SITE STRATEGIES

Strategy 2-652.1 Objective: Exclusion boom tidal inlets.

ACP DATE 9/4/1997

There are a half dozen small, low current tidal inlets. Each can be closed by staking 10' or 20' boom segments with sorbant backing depolyed by a team on foot from land or water. There is also a tide gate on the east Benicia Marina channel bulkhead which must be closed to exclude oil from the marsh to the east. An alternaitve measure is to close tidal inlets with fill (which requires notification of BCDC and US Corps Engineers).

Strategy 2-652.2 Objective: Deflection to collection: If oil is near shore due to spill origin or wind, this is a good area for diversion to shore for capture and recovery.

ACP DATE 9/4/1997

There are good shore capture points at 1st St, E 5th St, and at E 6th St (inside industrial property) Deploy multiple layers of 1000'4X4+ at an angle to shore to ground the oil and collect using Shoreside Skimming Systems (SSS). There is an artificial embayment at E 6th with a road to its margin, making it an excellent collection site. The tug dock at East 5th St is an alternative collection site; it is very shallow inland from the tug mooring, and there is little current. East 1st St has paved access to water, but collection is more difficult due to currents.

Strategy 2-652.3 Objective: Protective booming of entire marsh front: When heavy or continuous re-oiling is emminant and deployment will not preempt other urgent need.

ACP DATE 9/4/1997

Set 4X4+ boom and sorbant boom as close to marshfront as possible with available shallow draft vessels. Stake and anchor in place. This strategy can be found in Potential Oil-Spill Protection Strategies for San Francisco Bay, California. (Hayes and Montelo, 1994).

Table of Response Resources

strategy number	harbor boom	swamp boom	Other boom type	sorb boom	Anchoring no	Anchoring type and gear	Boom boat	Skiffs punts	Skimmers No	Skimmers Type	Special Equipment No and kinds	staff deploy	Staff tend
2-652.1	0	150		150		20 stakes						2	
2-652.2	0	2000			4	4/12+/danforhts and stakes			1	portable	Bboats: very shallow draft	6	
2-652.3	0	5000		1000	8	8/22+/danforths & stakes	2	1			Bboat: very shallow draft	8	

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

There is land access from I-780: exit at either East 5th Street and proceed to Bay or exit at East 2nd Street and proceed via First Street to bay front. Water access: the site is on both sides of the Benicia Marina breakwater across from Martinez Marina. This site extends from the foot First Street, Benicia, and continues to the east to the Benicia Warf. The site is on both sides of the Benicia Marina.

LAND ACCESS: ALL TYPES AT ACCESS POINTS, ELSE FOOT

WATER LOGISTICS: SHALLOW DRAFT AT SHORE

Limitations: depth, obstruction

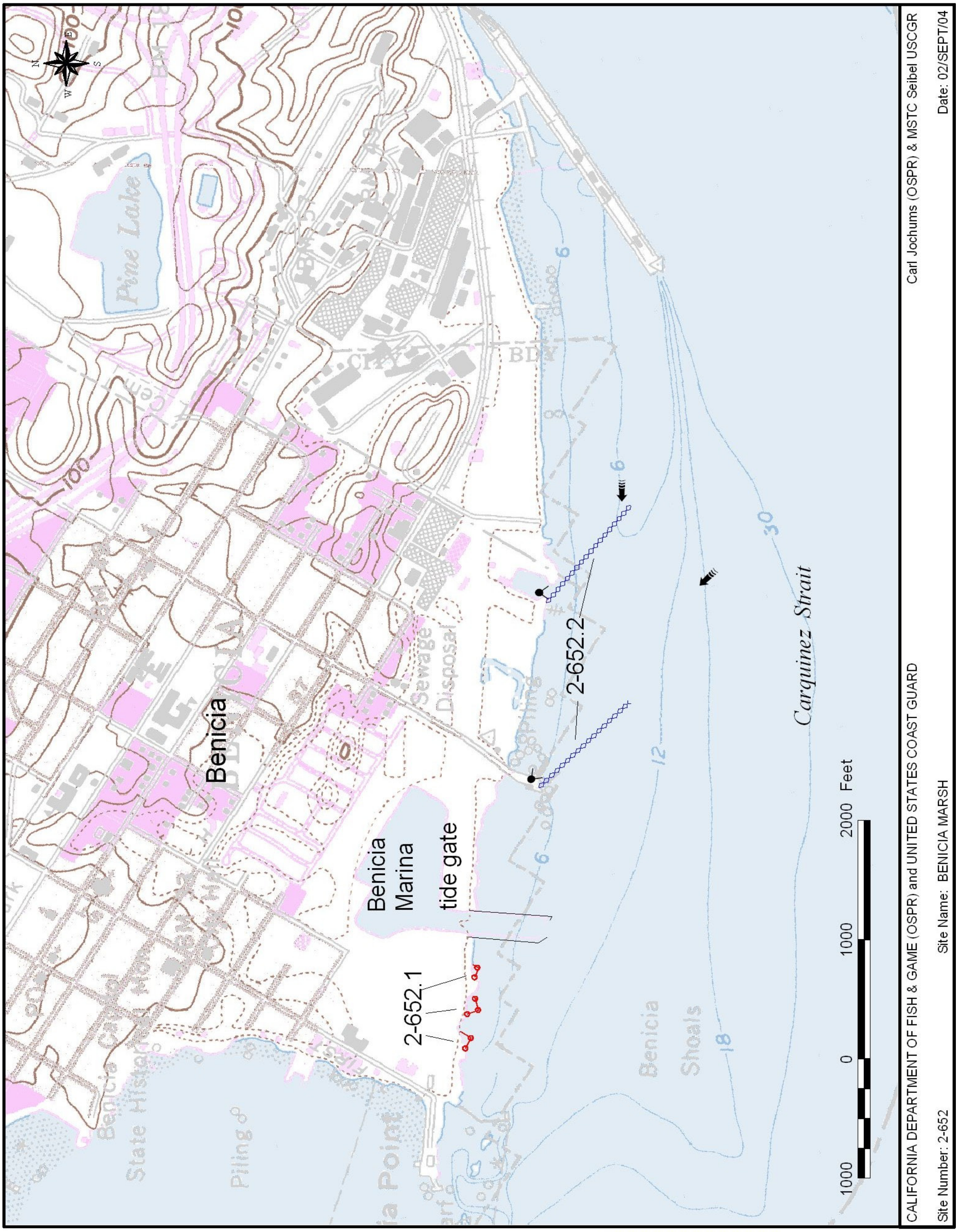
Launching, Loading, Docking and Services Available: Benicia Marina on site. Martinez Marina (1 mi. S).

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

Stage at Martinez Marina, Benicia Marina or Benicia wharf. Full services are available in both communities.

COMMUNICATIONS PROBLEMS:

ADDITIONAL OPERATIONAL COMMENTS:



Harbor Boom	Sorbent Boom	Dike or Berm
Swamp Boom	Other Boom	Excellcior Fence
sss / sfs	tsa / sps	tba/voo

2-654 -A Site Summary- Goodyear Marsh 2-654 -A

		Thomas Guide Location	Latitude N	Longitude W
County:	Solano		3 8 04	122 07
USGS Quad:	Benicia/Vine Hill	NOAA Chart: SUISUN BAY 18657/18652		

Last Page Update : 7/1/2005

SITE DESCRIPTION:

This site begins near the Benicia Bridge and continues for about three miles to Suisun Slough. This site is a partially diked wetland with an encroaching emergent tule marsh on its bayward margin. The half of marsh behind the levee is a California State wildlife refuge (part of Grizzley Island Wildlife Refuge system) and other the half north of Lake Herman Rd is owned by private gun clubs. The leveed portion is a combination of pickleweed and tule/sedge. The accreting marshfront on Suisun Bay is extremely shallow and is a successional cline from mudflats to tule marsh to tule thicket. In some places the accreting tule marshfront is over a hundred yards wide. The historic levee is open at several locations, and one creek, Sulfur Springs Creek, flows through it from the industrial park inland.

SEASONAL and SPECIAL RESOURCE CONCERN

This marsh has A level protection priority at all times.

RESOURCES OF PRIMARY CONCERN

This marsh has high priority at all times. The foremost concern is spread of oil to the inner high marsh though tidal channels and Sulfur Springs Creek. Oiling of the emergent marsh margin and frontage is of similar importance.

Waterfowl, shorebirds and marsh birds use this area for breeding and feeding and wintering, and the site is managed as a waterfowl refuge. Bird Sensitive Species include threatened black rail, endangered California clapper rail, Suisun common yellowthroat and Suisun song sparrow.

The endangered Saltmarsh harvest mouse and a wide variety of semi-aquatic mammals occur here including: muskrat, beaver, mink, river otter, raccoon.

Special Status plant species occurring here include Suisun marsh aster and Delta tule pea.

CULTURAL, HISTORIC, and ARCHEOLOGICAL SENSITIVITIES

Contact the California Dept of Parks and Recreation - Office of Historic Preservation (Eric Allison -(916) 653-9125), and the Northwest Information Center, (Leigh Jordan, Sonoma State College ((707) 664-0880)) for specific information on historic or cultural resources in this area.

KEY CONTACTS: Trustee (T); Entry/Owner/Access (E); Cultural (C); or Other Assistance (O)

Type	Name / Title	Organization	Phone
B	Laurie Briden	CA Dept of Fish & Game, Bay/Delta	(209) 955-7800
B	Brenda Grewell Restoration Ecologist	US Dept. of Agriculture	(530) 752-6260
BTEL	Grizzly Isl W/L Refuge	CA Dept. of Fish & Game	(707) 425-3828
ELO	Earl Johnson	Maritime Administration, Suisun Bay Reserve Fleet	(707) 745-5604
TB	Jerry Karr	Audubon Society, Solano County Chapter	(707) 643-7089
ELO	Joe Pecoraro Fleet Program Manager	Maritime Administration, Suisun Bay Reserve Fleet	(707) 745-0487
B	Mary Shaw	CA Native Plant Society, Solano President	(707) 747-5481

ADDITIONAL SITE SUMMARY COMMENTS:

County and Thomas Guide Location	NOAA CHART	Latitude N	Longitude W
Solano	SUISUN BAY 18657/18652	3 8 04	122 07

Last Page Update : 7/1/2005

CONCERNS and ADVICE to RESPONDERS:

This is a very sensitive site with endangered species. Because of the shallows and great sensitivity it will be extremely difficult to cleanup or rehabilitate. The two main concerns are oiling of the inner marsh via Sulfur Springs Creek and four other openings to inner sloughs. The more difficult problem is oiling and cleanup disturbance of the marshy margin. Avoid trampling marsh vegetation or tracking oil into marsh front or sediments. Large portions of this site are California Department of Fish and Game Wildlife Refuge.

HAZARDS and RESTRICTIONS:

The marsh is fronted by very shallow mudflats.

SITE STRATEGIES

The extreme shallows at the marsh front limits work to those times when tides are high enough to allow operations.

Strategy 2-654.1 **Objective: Exclude oil from all tidal sloughs, inlets, and Sulfur Springs Creek to keep oil out of back marsh.** ACP DATE 9/4/1997

Stake and anchor 200'4X4 boom in chevron at mouth entry points: Sulfur Springs Creek, 2 channels each opposite the two southerly rows of ships, one opening just north of MARAD pier, and opening at north end. Back with sorbent boom. This is extremely shallow water and will require action at high tide or with airboat or hovercraft.

Strategy 2-654.2 **Objective: Deflect to collection: When heavy oiling/reoiling is a threat on incoming tide with a southerly wind, intercept along shore oil and direct to collection.** ACP DATE 9/4/1997

Divert moving oil to collection skimming. Deploy 1000' 8X8' in deep water and 1000' 4X4+ boom in shallows to drive oil to shore. Set up Shoreside Skimmer near or at shore to collect near foot of Benicia Bridge. If oil is travelling off shoreline, set boom to deflect oil away from shore to main channel to floating skimmer. Repeat at MARAD pier as necessary. Waters near shore area very shallow which may necessitate assistance from shore.

Strategy 2-654.3 **Objective: If oil continues to threaten marshfront, deploy protective booming as recommended in SF Inlet Study by RPI/MSRC** ACP DATE 9/4/1997

If it appears that foregoing strategies will not keep oil out of wetlands, deploy exclusion booming along marsh front: this strategy for deployment can be found in Potential Oil-Spill Protection Strategies for San Francisco Bay, California. (Hayes and Montelo, 1994). This requires 27,000' of Hboom or tidal barrier boom or swamp boom.

Table of Response Resources

strategy number	harbor boom	swamp boom	Other boom type	sorb boom	Anchoring no	Anchoring type and gear	Boom boat	Skiffs punts	Skimmers No	Skimmers Type	Special Equipment No and kinds	staff deploy	Staff tend
2-654.1	0	1000			3	3/5#+ anchor and stakes		1			one airboat/hovercraft/shallow boat	2	
2-654.2	1000	1400		100	4	4/22+/danforths + chain & stakes	2	2	2	SSS/SP	Bboats: very shallow draft	8	
2-654.3	0	27000			20	20/12+/danforth & stakes	8	2			Bboats: very shallow draft	28	

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

There is land access from I-680 by exiting at Industrial Park or a Lake Herman and proceeding toward the water. The land access is to a limited exposure of the marsh front. Water access is one mile north east from Benicia or Martinez marinas. This site begins near the Benicia Bridge and continues for about three miles to Suisun Slough.

LAND ACCESS: ALL ON ROADS/PIER. FOOT ONLY OTHERWISE

WATER LOGISTICS: EXTREME SHALLOW DRAFT AT LOWER TIDES
Limitations: depth, obstruction

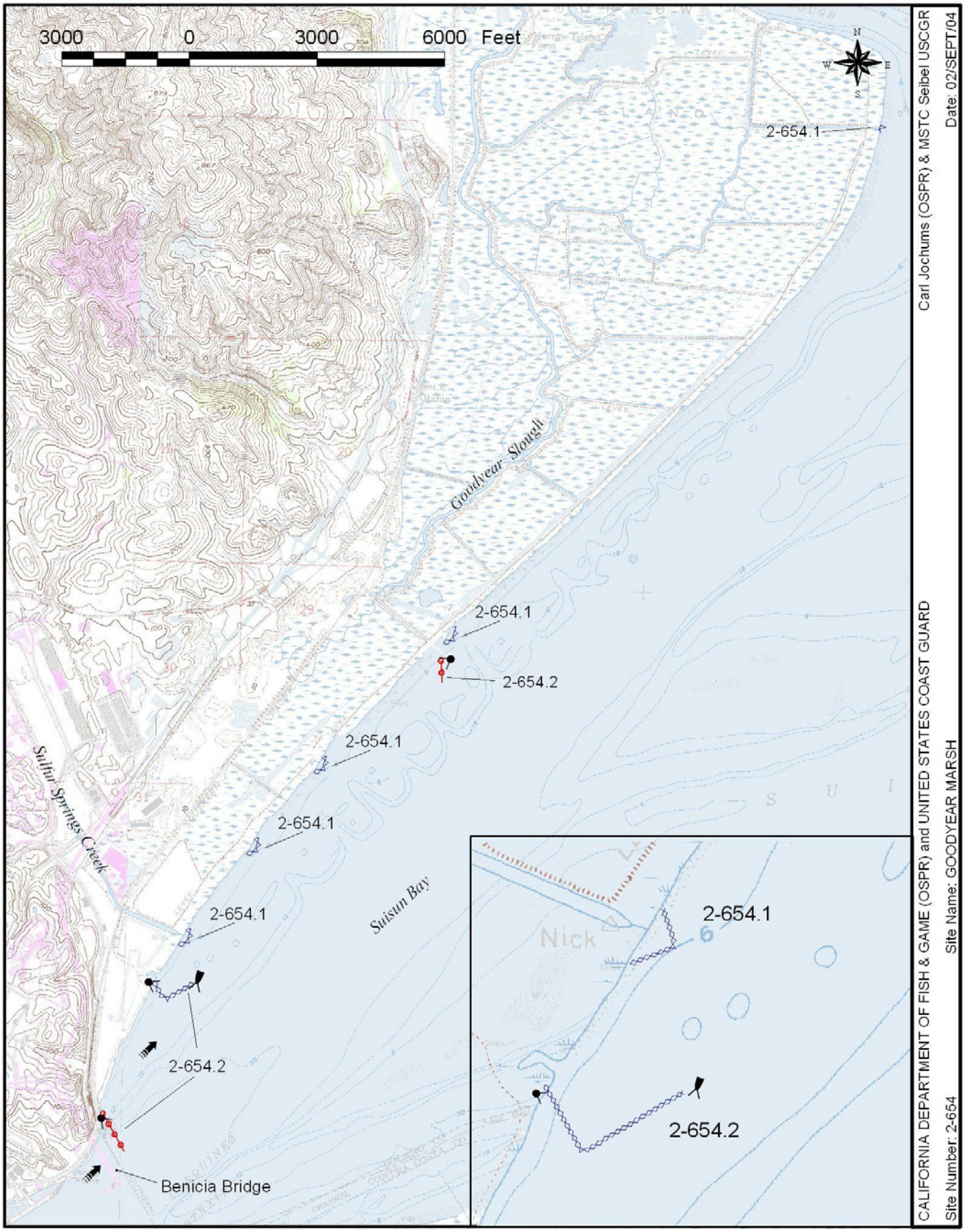
Launching, Loading, Docking and Services Available: Benicia and Martinez Marinas (1 mi. to W from site).

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

Deploy from Martinez Marina, Benicia Marina or Benicia wharf. The mothball fleet wharf is also an all-service pier with crane. Stage at Martinez Marina, Benicia Marina or Benicia wharf. Full services are available in both communities.

COMMUNICATIONS PROBLEMS:

ADDITIONAL OPERATIONAL COMMENTS:



Harbor Boom
Swamp Boom
sss / sfs

Sorbent Boom
Other Boom
tsa / sps

Dike or Berm
Excellcior Fence
tba/voo

Site Summary- Joice Island, Suisun Slough, and Montezuma Slough

2-655 -A

Thomas Guide Location	Latitude N	Longitude W
	3 8 08	122 04

County: Solano

USGS Quad: Fairfield South, Vine Hill

NOAA Chart: 18656 Suisun Bay

Last Page Update : 1/1/1994

SITE DESCRIPTION:

This site includes the mouth of Suisun Slough and Montezuma Slough and the marshy tip of Joice Island at the northeast corner of Grizzly Bay. Between the two slough mouths is Joice Island. The southern tip of Joice Island is undiked marshland with numerous channels connect it with Grizzly Bay. While the marshy tip is a large natural wetland, the greater concern is the strategic importance of these two great tidel sloughs. These two sloughs are the main tidal avenue for all of Suisun Marsh, the largest wetland of California. These two waterways could become conduits for oil conveyance to the extremes of Suisun Marsh. There are miles of branching channels between the diked marshes and at times when tide gates are open (particularly in the fall and winter) to the vast acres of duck club and wildflife refuge marshes behind the island levees. Most of Suisun Marsh is owned by duck clubs or is part of the Californian Deptment of Fish and Game Grizzly Island Wildlife Refuge system. Joice Island has become a public property and is being operated for marsh research.

SEASONAL and SPECIAL RESOURCE CONCERN

The marsh is "A" priority all year. The area supports endangered species and is very important to migratory waterfowl.

RESOURCES OF PRIMARY CONCERN

Primary habitats at risk are those up-channel which would be threatened if oil were to enter the sloughs. The marsh at the tips of Joice and Grizzley Islands is unleveed and in a near natural state. The margins of Montezuma and Suisun Slough are emergent marsh.

The area is of major importance to migratory waterfowl and to marsh bird and waterbird breeding. Special Status Species include endangered California clapper rail, threatened black rail, Suisun song sparrow, and saltmarsh common yellowthroat. An even wider variety of waterfowl, waterbirds, shorebirds, passerines, raptors, and other birdlife winter here.

The saltmarsh harvest mouse is found throughout these marshes. Semiaquitic species like mink, otter, beaver, etc,, occure thoughout the area.

endangered fish, including delta smelt and winter run chinook pass though these waters.

Several rare plants also live here: delta tule-pea, (Lathyrus jepsonii spp jepsonii), soft bird's beak (Cordylanthus mollis ssp. mollis), and Suisum aster (Aster chilensis var. lentus)

CULTURAL, HISTORIC, and ARCHEOLOGICAL SENSITIVITIES

Contact the California Dept of Parks and Recreation - Office of Historic Preservation (Eric Allison -(916) 653-9125), and the Northwest Information Center, (Leigh Jordan, Sonoma State College ((707) 664-0880)) for specific information on historic or cultural resources in this area.

KEY CONTACTS: Trustee (T); Entry/Owner/Access (E); Cultural (C); or Other Assistance (O)

Type	Name / Title	Organization	Phone
B	Peter Baye, Ph.D. Coastal Plant Ecologist		(415) 310-5109
B	Brenda Grewell Restoration Ecologist	US Dept. of Agriculture	(530) 752-6260
BTEL	Grizzly Isl W/L Refuge	CA Dept. of Fish & Game	(707) 425-3828
B	Jerry Karr	Audubon Society, Solano County Chapter	(707) 643-7089
B	Jan Knight	US Fish and Wildlife Service	(916) 978-4866
B	Mary Shaw	CA Native Plant Society, Solano President	(707) 747-5481

ADDITIONAL SITE SUMMARY COMMENTS:

County and Thomas Guide Location	NOAA CHART	Latitude N	Longitude W
Solano	18656 Suisun Bay	3 8 08	122 04

Last Page Update :

CONCERNS and ADVICE to RESPONDERS:

This site is the mouths of Suisun Slough and Montezuma Slough where oil entry would result in exposure to miles of marsh. Between these two slough mouths is sensitive marsh with small tidal channels leading into the unleveed marsh. The objectives in order of importance are: 1) are to exclude oil from entering the major sloughs, 2) to close the small tidal sloughs near the mouths of the big channels, and 3) to protect exposed margins from oiling. Responders should avoid trampling marsh vegetation and tracking oil into marsh and sediments.

HAZARDS and RESTRICTIONS:

Shallows.

SITE STRATEGIES

Strategy 2-655.1 Objective: Exclude from minor and major sloughs: deflect to collection Suisun and Montezuma Slough mouths and chevron exclusion at tidal inlets.

ACP DATE 1/1/1994

a) At Suisun and Montezuma Slough mouths: exclude oil by deflection to collection. From the shoreline, deploy collection boom arms to collection by stationary floating skimmer (SFS) or self propelled skimmer (SPS) positioned in the channels. About 2000 ft of 8X8+ harbor boom will be needed for Suisun Slough and about 1700' for Montezuma Slough

b) At the tip of Joice Island, there are nine or more tidal inlets to the marsh at the tip of Joice Island between Montezuma and Suisun Sloughs. To exclude oil, deploy swamp boom (4X4+) in a chevron "V" outside the mouth of each opening: using skiffs, anchor the midpoint and stake or anchor the ends at the shoreline outside the channel mouths. 50' lengths will be needed for most openings. About 800 ft of boom will be needed for this deployment.

Strategy 2-655.3 Objective: Protective booming of undiked tip of Joice Island

ACP DATE 1/1/1994

Protective Booming: If it appears that othe strategies will not keep oil out of the wetlands recommend that exclusion boom be deployed along the face of the marsh where feasible. The portion of Joice Island lying between the entrances to Suisun and Montezuma Sloughs is a high priority for such protection. It is estimated that 8,000 to 9,000 ft of exclusion boom will be required to exclude oil from the undiked wetlands at the south end of Joice Island. A strategy for deployment of exclusion boom is illustrated in Potential Oil-spill Protection Strategies for San Francisco Bay, California (Hayes and Montello, 1994)

Table of Response Resources

strategy number	harbor boom	swamp boom	Other boom type	sorb boom	Anchoring no	Anchoring type and gear	Boom boat	Skiffs punts	Skimmers No	Skimmers Type	Special Equipment No and kinds	staff deploy	Staff tend
2-655.1	3700	800			9	9/22+/danforths + chain	6	2	2	SFS or		14	
2-655.3	9000				15	15/22+/danfroths + chain	10	2				30	

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

Access by water only. Iif launching from Benicia/Martinez, proceed northeast past the Reserve Fleet and into northwest corner of Grizzly Bay. From Pittsburg,, go northwest via Suisun Cut to Grizzly Bay and on the Montezuma. From Suisun/Fairfield, travel down Montezuma or Suisun Slough to their mouth on Grizzley Bay. This site includes the mouth of Suisun Slough and Montezuma Slough and the marshy tip of Joice Island at the northeast corner of Grizzly Bay.

LAND ACCESS: no land access except by foot.

WATER LOGISTICS: no limitations except shallow margins.
Limitations: depth, obstruction

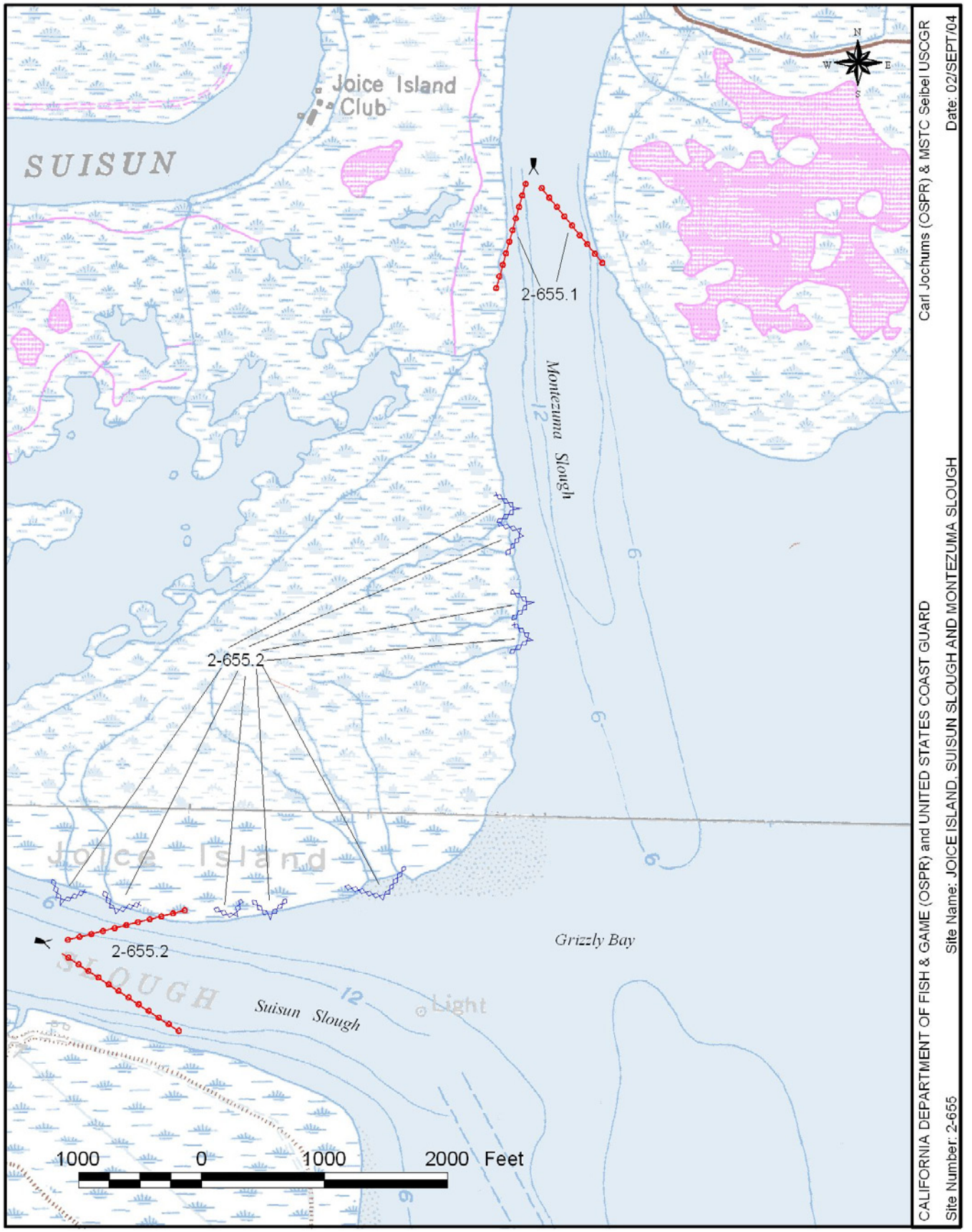
Launching, Loading, Docking and Services Available: launch, fuel, moorage at Benicia & Martinez Marinas and City of Suisun. Also, lauch ramp at nearby Pearce's harbor.

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

Best staging at Martinez or Benicia sites.

COMMUNICATIONS PROBLEMS:

ADDITIONAL OPERATIONAL COMMENTS:



Harbor Boom
Swamp Boom
sss / sfs

Sorbent Boom
Other Boom
tsa / sps

Dike or Berm
Excellcior Fence
tba/voo

Site Summary- Grizzly Bay

2-660 -A

Thomas Guide Location	Latitude N	Longitude W
	3 8 08	122 02

County: Solano

USGS Quad: Fairfield South, Denverton

NOAA Chart: 18656 Suisun Bay

Last Page Update : 1/1/1994

SITE DESCRIPTION:

This site includes all of Grizzly Bay and the shoreline perimeter from the mouth of Montezuma Slough to Pt. Buckner. This bay is very shallow and averages less than six feet deep. It is heavily used by waterbirds, especially in the wintering period. There are about 20 open water duck blinds scatted on the bay. The entire shoreline is marshy. The margins have three kinds of marsh habitat: prograding marsh which is difficult to clean or rehabilitate, eroding shores, and tidal inlets and barrow channels which have extensive exposure. Levees are relatively near the north shore (Grizzly Island) and south shore (Simmons Island). However, the northeast margin is a prograding shoreline; the tidal flats are 1000 yds wide, and the marsh between the levee and mudflat is 500 yds wide. Most of the shores are owned by adjacent duck clubs.

SEASONAL and SPECIAL RESOURCE CONCERN

The marshes are "A" priority all year. There are thousands of waterfowl on the open waters of Grizzly Bay during the winter.

RESOURCES OF PRIMARY CONCERN

There are three habitats of concern. Foremost is the open water of Grizzley Bay which is an important area for waterfowl to raft in during the winter and spring. Of equal concern is the marshes along the margin. The prograding marsh at the northeast would be difficult to clean or rehabilitate. The remaining marshy margins are eroding shores and tidal inlets and barrow channels which have extensive exposure. There are also extensive infauna communities in the mudflats and bottoms.

This area is of major importance to migratory waterfowl. At the peak of the wintering period, vast numbers of waterbirds rest and feed on Grizzley Bay, when 100,000 ducks is not uncommon. Waterfowl and marsh birds use the shoreline year-round, including the endangered California clapper rail, the threatened black rail, Suisun song sparrow, and saltmarsh common yellowthroat.

The endangered saltmarsh harvest mouse and the ornate shrew are among the wide variety of mammals found here.

Several rare plants also live here: delta tule-pea, soft bird's beak, Suisun aster.

CULTURAL, HISTORIC, and ARCHEOLOGICAL SENSITIVITIES

Contact the California Dept of Parks and Recreation - Office of Historic Preservation (Eric Allison -(916) 653-9125), and the Northwest Information Center, (Leigh Jordan, Sonoma State College ((707) 664-0880)) for specific information on historic or cultural resources in this area.

KEY CONTACTS: Trustee (T); Entry/Owner/Access (E); Cultural (C); or Other Assistance (O)

Type	Name / Title	Organization	Phone
B	Peter Baye, Ph.D. Coastal Plant Ecologist		(415) 310-5109
B	Brenda Grewell Restoration Ecologist	US Dept. of Agriculture	(530) 752-6260
TBEL	Grizzly Isl W/L Refuge	CA Dept. of Fish & Game	(707) 425-3828
B	Jerry Karr	Audubon Society, Solano County Chapter	(707) 643-7089
B	Jan Knight	US Fish and Wildlife Service	(916) 978-4866
B	Mary Shaw	CA Native Plant Society, Solano President	(707) 747-5481

ADDITIONAL SITE SUMMARY COMMENTS:

County and Thomas Guide Location	NOAA CHART	Latitude N	Longitude W
Solano	18656 Suisun Bay	3 8 08	122 02

Last Page Update :

CONCERNS and ADVICE to RESPONDERS:

There are two great concerns here. First, vast numbers of ducks stay here; typically about 100,000 during the winter: ducks are very vulnerable to oil. Second, there are large sensitive marshes particularly at the northeast but also along all the margins and little side channels. The shallow water and large waves commonly encountered will make this area difficult to protect with current technology. Minimize trampling of the marsh because there are very small endangered plants and animals present.

HAZARDS and RESTRICTIONS:

This shallow bay can have dangerously aggressive waves under windy conditions. There are shallows along margins.

SITE STRATEGIES

Strategy 2-660.1 Objective: Protective booming of northeast prograding marsh

ACP DATE 1/1/1994

Exclusion Booming: If it appears that other strategies will not keep oil out of the wetlands recommend exclusion booming be deployed across the northeastern shore of Grizzly Bay from Pelican Pt. To the nothern shore of the bay. It is estimated that 13,000 ft. of harbor or tidal barrier boom will be required to exclude oil from the wetlands at the head of Grizzly Bay. This strategy for deployment of exclusion boom can be found in Potential Oil-Spill Protection Strategies for San Francisco Bay, CA (Hayes and Montelo, 1994).

Strategy 2-660.2 Objective: Deflection at Pt. Buckler. Keep oil in the Suisun Cut channel and imped it from moving across Grizzly Bay.

ACP DATE 7/1/2002

Deploy 300' 8X8+ harborboom off Pt Buckler at about the 15' depth contour. Shallows near shore are a grounding threat to boom boat.

Table of Response Resources

strategy number	harbor boom	swamp boom	Other boom type	sorb boom	Anchoring no	Anchoring type and gear	Boom boat	Skiffs punts	Skimmers No	Skimmers Type	Special Equipment No	Special Equipment and kinds	staff deploy	Staff tend
2-660.1	13000				26	26/22+/danforth + chain	12	2					40	
2-660.2	300	0	0	0	2	22#+/danforth & chain	1	0	0	0		shallow draft boom boat - grounding capa	3	

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

Land access is from the private levee roads along the bay. They may be reached from Hwy 12 in Suisun City, then south on Grizzly Island road (contact Grizzly Island Wildlife Refuge for assistance with access). Nearest boat access is 3 miles southeast at McAvoys Marina, Bay Point (8 mi to Martinez, 8 mi to Pittsburg). Extreme shallows near shore limit traffic to very shallow draft vessels and airboats/hovercraft at lower tides. This site includes all of Grizzly Bay and the shoreline perimeter from the mouth of Montezuma Slough to Pt. Buckner.

LAND ACCESS: seasonal limitations on levees

WATER LOGISTICS: very shallow at shorelines: margins are mudflats at low low

Limitations: depth, obstruction

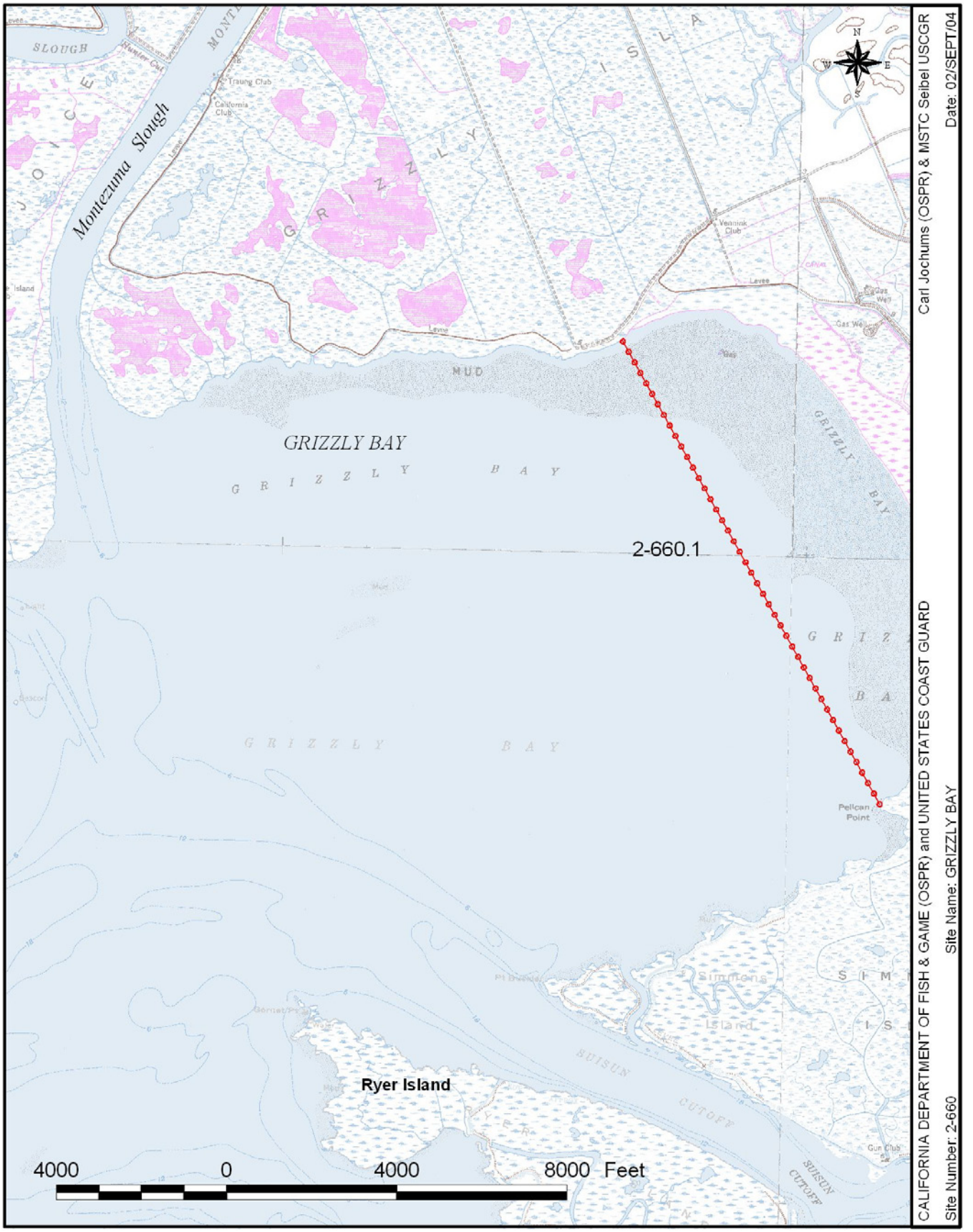
Launching, Loading, Docking and Services Available: nearest launch is Martinez, Benicia, and McAvoy's; each has fuel, moorage, and repair.

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

Best facilities, staging, field posts are at above marinas.

COMMUNICATIONS PROBLEMS:

ADDITIONAL OPERATIONAL COMMENTS:



Harbor Boom
Swamp Boom
sss / sfs

Sorbent Boom
Other Boom
tsa / sps

Dike or Berm
Excellcior Fence
tba/voo

		Thomas Guide Location	Latitude N	Longitude W
County:	Solano	TG Solano	38 05.4	122 00
USGS Quad:	Honker Bay, Vine Hill	NOAA Chart: SUISUN BAY 18658/18652/18656		

Last Page Update : 9/4/1997

SITE DESCRIPTION:

This site includes the 4 miles of bay frontage on Suisun Cutoff and berm islands of Simmons Island from Noyce Slough on the east to Pt. Buckler. There are several land ownerships - all are duck clubs. This location is also strategic as a pathway for oil to move from west Suisun Bay to the extensive marshes of Honker Bay and nearby locales via Suisun Cutoff. Suisun Cutoff is very deep.) USGS drifter studies have demonstrated how surface currents of western Suisun Bay funnel though this deep channel on flood tides. Simmons Island itself is a large diked island which is maintained for duck hunting. The dike is riprapped. Some of the margin has a barrow channel separating the historic marsh front from the current island levee, resulting in extensive marshy margins. Although there is some emergent marsh along the ripped island levee, the outer perimeter is a premium strip of native marsh. The barrow channel is open to the bay at multiple points. Wave action here tends to be tangential to the shoreline. There is a tide gate to the inner island sloughs at Noyce Slough.

SEASONAL and SPECIAL RESOURCE CONCERN

These marshy areas have A-protection priority at all times. Major seasonal concerns are the large numbers of waterfowl which here and in adjacent areas.

RESOURCES OF PRIMARY CONCERN

These marshy areas are pristine to excellent habitat for all manner of marsh species. Oil must be prevented from entering barrow channels and interior sloughs by exclusion booming. The open bay waters both here and to the east in Honker Bay are important for wintering waterfowl. Inner island marshes are exposed to oil threats if the tide gate at Noyce Slough is open.

The marshy margins are prime marsh bird and waterfowl habitat for many species including Suisun song sparrow and possibly black rail. This area is heavily used by ducks and other water birds during the wintering season.

These emergent marshes are inhabited by semi-aquatic mammals such as river otter, raccoon, beaver and muskrat. Salt marsh harvest mouse is probably present.

Fish using these waters include adults and juveniles of the various Delta species, including sensitive species: Delta smelt, longfin smelt, and winter-run chinook; major fish stocks move though this area: salmon, steel head, green and white sturgeon, striped bass, American shad.

The emergent marshes here are typical tule-sedge mix with some cattail.

Several sensitive plants occur here: Mason's lilaeopsis, Suisun marsh aster, and soft bird's beak.

CULTURAL, HISTORIC, and ARCHEOLOGICAL SENSITIVITIES

Contact the California Dept of Parks and Recreation - Office of Historic Preservation (Eric Allison -(916) 653-9125), and the Northwest Information Center, (Leigh Jordan, Sonoma State College ((707) 664-0880)) for specific information on historic or cultural resources in this area.

KEY CONTACTS: Trustee (T); Entry/Owner/Access (E); Cultural (C); or Other Assistance (O)

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B	Peter Baye, Ph.D. Coastal Plant Ecologist		(415) 310-5109
B	Laurie Briden	CA Dept of Fish & Game, Bay/Delta	(209) 955-7800
B	Brenda Grewell Restoration Ecologist	US Dept. of Agriculture	(530) 752-6260
TBEL	Grizzly Isl W/L Refuge	CA Dept. of Fish & Game	(707) 425-3828
B	Kent Nelson	CA Dept. of Water Resources	(916) 227-7581
B	Mary Shaw	CA Native Plant Society, Solano President	(707) 747-5481

ADDITIONAL SITE SUMMARY COMMENTS:

County and Thomas Guide Location	NOAA CHART	Latitude N	Longitude W
TG Solano Solano	SUISUN BAY 18658/18652/18656	38 05.4	122 00

Last Page Update :

CONCERNS and ADVICE to RESPONDERS:

This channel, Suisun Cut, is the major avenue for oil to move to Honker Bay, Spoonbill Creek and island marshes. This is a key location because strategy-.1 is key to excluding oil from vast shorelines at this and other sites. There are marshes along the margins which are also vulnerable but of lesser strategic importance. Responders should always minimize trampling of marsh vegetation and tracking oil into marshes and sediments.

HAZARDS and RESTRICTIONS:

There are shallows and obstructions along shore and inside the barrow channels.

SITE STRATEGIES

Strategy 2-665.1 **Objective: Collection/Exclusion of heavy oil flow though Suisun Cutoff, divert the oil to shore collection areas.** ACP DATE 9/4/1997

Cascade boom across Suisun Cutoff to direct oil toward quitewaters near shore for collection. Set up shore collection/skimming system either at duck club or dock west of duck club or both. Set additional boom at shore to protect shore and trap oil once it is diverted. Currents are strong and channel is deep: heavy chain and long scope will be necessary. Anchoring skill is a must for this deployment to succeed.

Strategy 2-665.2 **Objective: Exclude oil from entering barrow channels and slough entrances.** ACP DATE 9/4/1997

There are multiple breaks in the north shore. On Suisun Cutoff side, exclude oil from entering side channels by deploying boom across openings (a) Andy Mason Slough - 600' 8X8+Hboom, (b) 400'+ 4X4+hboom/3seg., (c) 300' 4X4+ Hboom/4seg. On the Grizzly Bay side (d), close the through channel (Andy Mason Slough) (800' 4X4+Hboom) and the barrow channel (50' 4X4+ Hboom). (Back with sorbant as necessary). If current is carrying oil out of Suisun Cutoff at Pt Buckler, deploy Hboom (500' 8X8+) off Pt to deflect oil back into Suisun Cutoff. Leave trailing ends to shore to insure agains shortcircuiting.

Strategy 2-665.3 **Objective: Protective Booming: If there is threat of heavy oiling and saturation of the marsh front, deploy protective boom coverage, when resource use will not preclude defending other sites against SO 5 and 6 impacts.** ACP DATE 9/4/1997

If foregoing strategies are inadequate to keep oil off marshy shorelines, deploy exclusion booming around threatened marshfronts: this strategy can be found in Potential Oil-Spill Protection Strategies for San Francisco Bay, California. (Hayes and Montello, 1994). This would require 6 miles of a combination of intertidal, 8X8+ Hboom, and 4X4+Hboom.

Table of Response Resources

strategy number	harbor boom	swamp boom	Other boom type	sorb boom	Anchoring no	Anchoring type and gear	Boom boat	Skiffs punts	Skimmers No	Skimmers Type	Special Equipment No and kinds	staff deploy	Staff tend
2-665.1	4000				15	22#+ danforth & CHAIN	4	2	2	SSS	3500' of line	16	
2-665.2	1100	1550			16	16/22+/danforth + chanin	2	4			very sallow craft, airboat, hovercraft etc.	15	
2-665.3	10000	15000			15	anchors and stakes	10	6			2 hovercraft/airboat; 4 very shallow Bboat	44	

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

Land access is from the private levee roads along the bay. They may be reached from Hwy 12 in Suisun City, then south on Grizzly Island road to Grizzly Island Wildlife Refuge. For further access and entry, contact Grizzly Island Wildlife Refuge (707-425-3828) or Suisun Resource Conservation District staff (707-525-9602). Nearest boat access is 3 miles southeast at McAvoys Marina, Bay Point (9 mi to Martinez, 7 mil to Pittsburg). This site includes the 4 miles of bay frontage on Suisun Cutoff and berm islands of Simmons Island from Noyce Slough on the east to Pt. Buckler. There are several land ownerships - all are duck clubs.

LAND ACCESS: ALL TYPES WHEN LEVEES ARE DRY

WATER LOGISTICS: VERY SHALLOW DRAFT < 2' NEAR SHORE.
Limitations: depth, obstruction

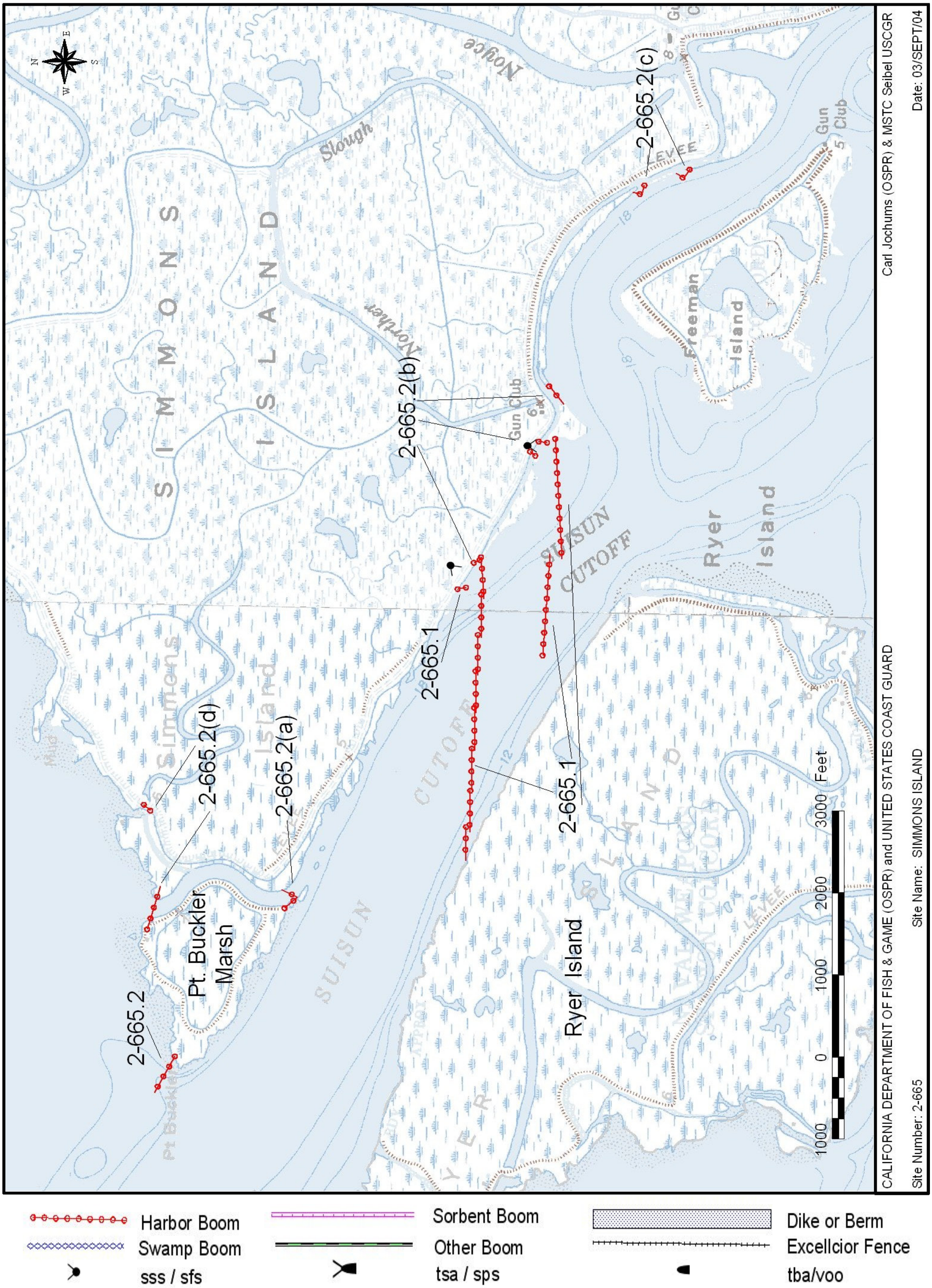
Launching, Loading, Docking and Services Available: McAvoy/Harris Marina at Bay Point. Pittsburg Marina. Martinez Marina.

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

The duck clubs have power and good small boat docking facilities.
Nearest major deployment site/field post is McAvoy's/Harris', full service marinas, or Concord Naval Weapons Station.

COMMUNICATIONS PROBLEMS:

ADDITIONAL OPERATIONAL COMMENTS:


SIMMONS ISLAND
Pt. Buckler Marsh
Ryer Island
Freeman Island
SUISUN CUTOFF
2-665.1
2-665.2
2-665.2(a)
2-665.2(b)
2-665.2(c)
2-665.2(d)
Gun Club
Feet
1000 0 1000 2000 3000
Carl Jochums (OSPR) & MSTC Seibel USCGR
Date: 03/SEPT/04
CALIFORNIA DEPARTMENT OF FISH & GAME (OSPR) and UNITED STATES COAST GUARD
Site Name: SIMMONS ISLAND
Site Number: 2-665
Harbor Boom
Swamp Boom
sss / sfs
Sorbent Boom
Other Boom
tsa / sps
Dike or Berm
Excellcior Fence
tba/voo

Site Summary- Freeman & Snag Islands

2-667 -A

		Thomas Guide Location	Latitude N	Longitude W
County:	Solano		38 08.8	121 59.5
USGS Quad:	Honker Bay	NOAA Chart:	18656 Suisun Bay/Roe Island & vicinty	

Last Page Update : 9/4/1997

SITE DESCRIPTION:

This site includes Snag and Freeman Islands which are located just south of Dutton Island and east of Ryer Island in north central Suisun Bay. Both are property of Concord Naval Weapons Station. These two islands have emergent marsh margins. Snag is high marsh with cattails and shrubs. Freeman Island is low saltmarsh. It has an inside channel which goes all the way around the inside of the island and supplies water to the inner marsh with small channels. Tide water is admitted to this inner channel via breaks in its margin: there four breaks in the southwest shore and two on the north shore of Freeman Island. It also has a convoluted marshy shoreline.

SEASONAL and SPECIAL RESOURCE CONCERN

The marshy areas have A-protection priority at all times. Winter is a particularly important time for waterfowl.

RESOURCES OF PRIMARY CONCERN

Both Islands are marshes which have great sensitivity. Freeman Island is much more vulnerable than Snag because Freeman is more vulnerable to oil intrusions to the inner marshes via multiple tideal channals and its low marshy fring. Snag Island has no tidal channels but has a marshy fringe and supports high marsh species.

There is extensive marsh bird habitat: Sensitive Species include Suisun Song Sparrow and probably black rail.

These islands are inhabited by small semi-aquatic mammals such as river otter, beaver, mink and muskrat.

Fish species using these waters include adults and juveniles of the various Delta species, including sensitive species: Delta smelt, longfin smelt, Winter-run chinook, and major fish stocks move though this area: salmon, steel head, sturgeon, striped bass, American shad.

The emergent marshes here are predominately tule, but cattails and sedges are also important.

Several sensitive plants occur here: Delta tule pea, Mason's lilaeopsis.

CULTURAL, HISTORIC, and ARCHEOLOGICAL SENSITIVITIES

Contact the California Dept of Parks and Recreation - Office of Historic Preservation (Eric Allison -(916) 653-9125), and the Northwest Information Center, (Leigh Jordan, Sonoma State College ((707) 664-0880)) for specific information on historic or cultural resources in this area.

KEY CONTACTS: Trustee (T); Entry/Owner/Access (E); Cultural (C); or Other Assistance (O)

Type	Name / Title	Organization	Phone
	Laurie Briden	CA Dept of Fish & Game, Bay/Delta	(209) 955-7800
	Brenda Grewell Restoration Ecologist	US Dept. of Agriculture	(530) 752-6260
	Kent Nelson	CA Dept. of Water Resources	(916) 227-7581
	Richard Pieper Director	US Navy, Concord Naval Weapons Station, Environ	(925) 246-4011

ADDITIONAL SITE SUMMARY COMMENTS:

County and Thomas Guide Location	NOAA CHART	Latitude N	Longitude W
Solano	18656 Suisun Bay/Roe Island & vicinty	38 08.8	121 59.5

Last Page Update :

CONCERNS and ADVICE to RESPONDERS:

These island marshes and the endangered plants and animals living there, are very vulnerable to oil damage. Primary concern is penetration of oil into the marsh via tidal channels and secondarily into emergent marsh margins. Responders should minimize trampling of marsh vegetation and avoid tracking oil into marshes and sediments. Small endangered plants and animals are present.

HAZARDS and RESTRICTIONS:

There are shallows and obstructions around and inside the island. Suisun bay can have aggressive waves.

SITE STRATEGIES

Strategy 2-667.1 **Objective: Exclude oil from entering openings to perimeter barrow channel and interior channels of Freeman Island.** ACP DATE 9/4/1997

There four breaks in the southwest shore and two on the north shore of Freeman Island, all of them open to an inside barrow channel which goes all the way around the inside of the island and supplies water to the inner marsh. On the south side, exclude oil entry by deploying chevron "V" exclusions with about 300' each of 8X8+ boom with mid-point anchors and staking at shoreline in front of the openings. To be sure to stop movement of any oil passing these wave exposed openings, then deploying shore segments of 4X4+ across barrow channel to the left and right of the openings large openings. On the northerly shore, exclude oil from the two openings with short segements of 4X4+ in small chevrons.

Strategy 2-667.2 **Objective: Depending on winds, divert oil past windward pockets to minimize shore oiling for Freeman and to lessor extent for Snag Island.** ACP DATE 9/4/1997

A) On westerly end of Freeman Island, deploy deflection boom at the best angle to protect windward shore from approaching oil using 1300' of 8X8+. (See diagram 2-668.2A.)
B) When winds are from the south, the deployment should be reset to the southerly side of the island and a similar deployment will be needed on Snag Isl (2600' of 8X*8+ total needed) See diagram 2-668.2B.

Strategy 2-667.3 **Objective: Protective Booming: If there is threat of heavy oiling and saturation of the marsh front, deploy protective boom coverage, when resource use will not preclude defending other sites against SO 5 and 6 impacts.** ACP DATE 9/4/1997

If forgoing strategies are inadequate to keep oil off marshes, deploy exclusion booming around threatened marshfronts: this strategy can be found in Potential Oil-Spill Protection Strategies for San Francisco Bay, California. (Hayes and Montelo, 1994).

Table of Response Resources

strategy number	harbor boom	swamp boom	Other boom type	sorb boom	Anchoring no	Anchoring type and gear	Boom boat	Skiffs punts	Skimmers No	Skimmers Type	Special Equipment No and kinds	staff deploy	Staff tend
2-667.1	1200	250			8	8/12+/danforths & stakes	1	2				7	
2-667.2	1300				6	6/22+/danforths & stakes	2					6	
2-667.3	4000	13000			18	18/22+/danforth & stakes	5	3				21	

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

There is no land access. Nearest land access is across channel to Dutton Island. Nearest boat access is 3 miles southeast at McAvoys Marina, Bay Point (8 mi to Martinez, 7 mil to Pittsburg). This site includes Snag and Freeman Islands which are located just south of Dutton Island and east of Ryer Island in north central Suisun Bay. Both are property of Concord Naval Weapons Station.

LAND ACCESS: NONE

WATER LOGISTICS: VERY SHALLOW DRAFT < 2' NEAR ISLAND
Limitations: depth, obstruction

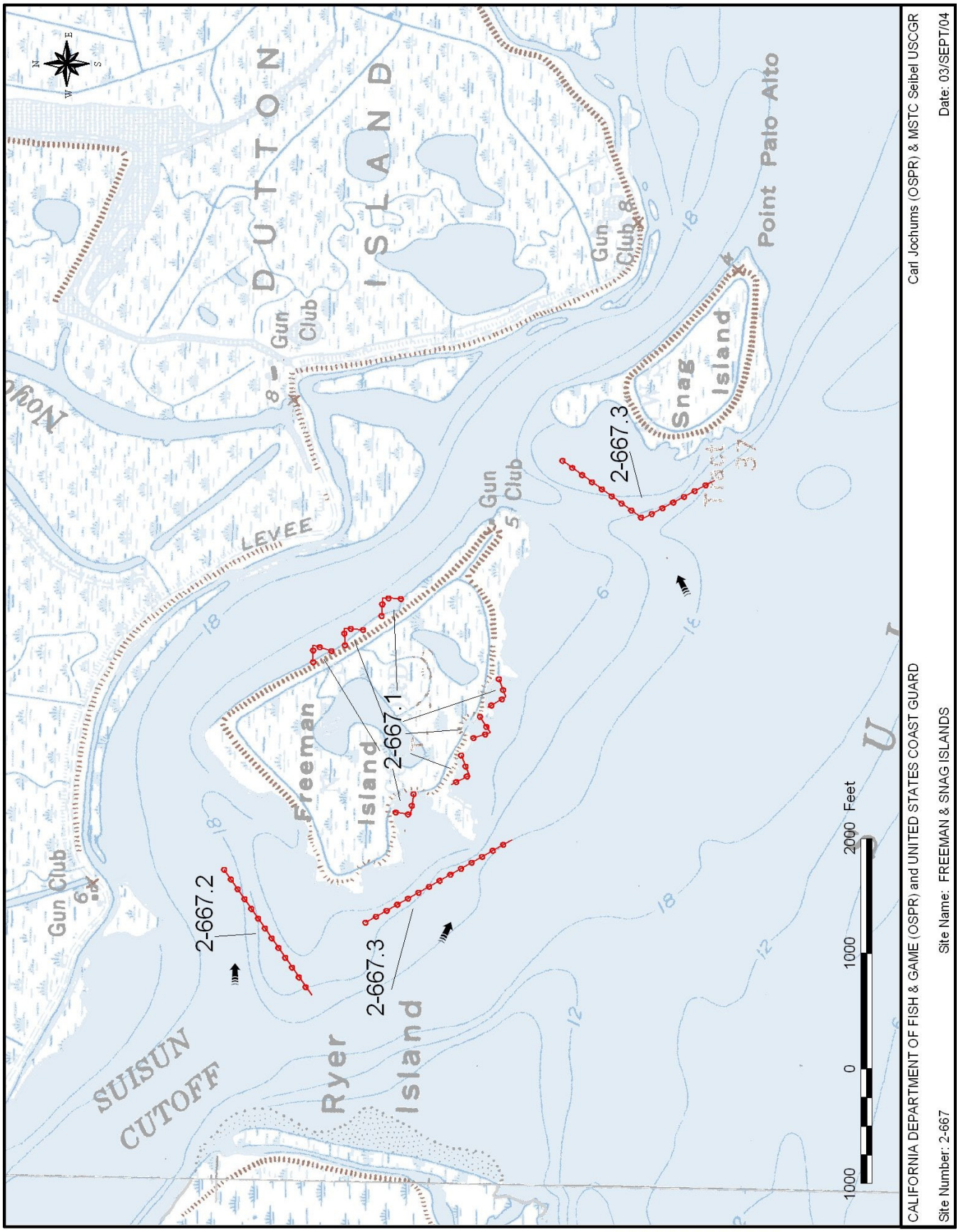
Launching, Loading, Docking and Services Available: McAvoy/Harris Marina at Bay Point. Pittsburg Marina. Martinez Marina.

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

The only alternative to marina facilities are duck clubs at nearby Dutton and Simmons Isls including good docking facilities.

COMMUNICATIONS PROBLEMS:

ADDITIONAL OPERATIONAL COMMENTS:


DUTTON ISLAND
Gun Club
Gun Club
Gun Club
Gun Club
Point Pato Alto
Snag Island
LEVEE
Freeman Island
Ryer Island
SUISUN CUTOFF
2-667.1
2-667.2
2-667.3
2-667.3
2000 Feet
1000
0
1000
Carl Jochums (OSPR) & MSTC Seibel USCGR
Date: 03/SEPT/04
CALIFORNIA DEPARTMENT OF FISH & GAME (OSPR) and UNITED STATES COAST GUARD
Site Name: FREEMAN & SNAG ISLANDS
Site Number: 2-667
Harbor Boom
Swamp Boom
sss / sfs
Sorbent Boom
Other Boom
tsa / sps
Dike or Berm
Excellcior Fence
tba/voo

		Thomas Guide Location	Latitude N	Longitude W
County:	Solano		38 08.8	121 59.5
USGS Quad:	Honker Bay / Vine Hill	NOAA Chart:	18656 Suisun Bay/Roe Island & vicinty	

Last Page Update : 9/4/1997

SITE DESCRIPTION:

This site includes the marshy islands off the mouth of Noyce Slough at the west edge of Dutton Island and east to include the mouth of Champion Slough. The property owners are the Grey Island Duck Club and the Wheeler Island Duck Club. The inner levee is rip rapped with intermittent emergent marsh. The levee is fronted with either a barrow channel or historic slough channels leaving an intermittent border of emergent marsh berm islands. These inlands and sloughs have extensive emergent undiked marsh and convoluted perimeters with habitat varying from pristine to high quality (> 5 miles). Several duck club docks are present.

SEASONAL and SPECIAL RESOURCE CONCERN

These marshy margins have A-protection sensitivity always.

RESOURCES OF PRIMARY CONCERN

These marshy islands and margins have the highest protection priority at all times, and oil must be excluded at entries to small sloughs and barrow channels. These marshy areas are prime habitat for most marsh dwelling species.

This is prime marsh bird and waterfowl habitat. Bird Sensitive Species include Suisun song sparrow and possibly black rail.

These emergent marshes are inhabited by semi-aquatic mammals such as river otter, raccoon, beaver and muskrat.

These waters are used by adults and juveniles of the various Delta species, including sensitive species: Delta smelt, longfin smelt, and winter-run chinook; major fish stocks move though this area: salmon, steel head, sturgeon, striped bass, American shad.

The emergent marshes here are typical tule-sedge mix with some cattail.

Several sensitive plants occur here: Mason's liliopsis, Suisun marsh aster.

CULTURAL, HISTORIC, and ARCHEOLOGICAL SENSITIVITIES

Contact the California Dept of Parks and Recreation - Office of Historic Preservation (Eric Allison -(916) 653-9125), and the Northwest Information Center, (Leigh Jordan, Sonoma State College ((707) 664-0880)) for specific information on historic or cultural resources in this area.

KEY CONTACTS: Trustee (T); Entry/Owner/Access (E); Cultural (C); or Other Assistance (O)

Type	Name / Title	Organization	Phone
B	Laurie Briden	CA Dept of Fish & Game, Bay/Delta	(209) 955-7800
B	Brenda Grewell Restoration Ecologist	US Dept. of Agriculture	(530) 752-6260
TEL	Grey Island Duck Club	Grey Island Duck Club, #805/806	
BTELO	Grizzly Isl W/L Refuge	CA Dept. of Fish & Game	(707) 425-3828
B	Kent Nelson	CA Dept. of Water Resources	(916) 227-7581
TEL	Wheeler Island Duck Club	Wheeler Island Duck Club, #807	

ADDITIONAL SITE SUMMARY COMMENTS:

County and Thomas Guide Location	NOAA CHART	Latitude N	Longitude W
Solano	18656 Suisun Bay/Roe Island & vicinty	38 08.8	121 59.5

Last Page Update :

CONCERNS and ADVICE to RESPONDERS:

This locale is important both because it is a point where oil threatening to move into Honker Bay can be intercepted and directed to shore collection, and also because there are extensive marshy islands and channels. Prime concern is intercepting oil threat to Honker Bay. Secondary issue is closing off side channels and marshes. Responders should minimize trampling of marsh and tracking oil into marshes and sediments. Small endangered species are underfoot.

HAZARDS and RESTRICTIONS:

There are shallows and obstructions along shore and inside the barrow channels.

SITE STRATEGIES

Strategy 2-668.1 Objective: Exclude oil from entering barrow channels and slough entrances. ACP DATE 9/4/1997

There are 2 openings at the east end (a: Noyce Sl): 600'4X4+Hboom and 3X(50' 4x4+) for the levee channal (beware of rocks). Verify that the westerly barrow channel has been blocked with 50' 4X4+ (opposite Freeman Isl per Simmons Island SS). Champion Slough exclusion requires 1000' 4X4+ at levee channel (b) just east of duck club pier and 600' and 100' 4X4 at opening (c) at east extreme mouth.

Strategy 2-668.2 Objective: Exclude by Diversion to Collect at shore line: If heavy oil is threatening Honker Bay and shorelines ACP DATE 9/4/1997

Deploy exclusion/deflection boom at the best angle to divert oil out of Suisun Cutoff to Dutton Isl shoreline for shoreside skimming system (SSS) recovery. Depending on prevailing winds, plan shoreside recovery location either (a) at levee east of mouth of Noyce Slough (opposite Freeman Isl) or (b) at the duck club (opposite Snag). Deploy 1500' 8X8+ Hboom in a favorable array and angle to direct oil out of swift current to quiet shore waters. Cascade as necessary. Repeat if oil is likely to escape (a second length of 1500 ft of boom would be needed). Channel is deep and currents are strong: very good anchoring skills are key to the success of this deployment.

Strategy 2-668.3 Objective: Portective booming of shoreline: When prevailing wind and oil threatens to overwhelm these measures, exclusion boom to protect shoreline especially easterly. ACP DATE 9/4/1997

If forgoing strategies are inadequate to keep oil off marshes, deploy exclusion booming around threatened marshfronts: this strategy can be found in Potential Oil-Spill Protection Strategies for San Francisco Bay, California. (Hayes and Montelo, 1994).

Table of Response Resources

strategy number	harbor boom	swamp boom	Other boom type	sorb boom	Anchoring no	Anchoring type and gear	Boom boat	Skiffs punts	Skimmers No	Skimmers Type	Special Equipment No	Special Equipment and kinds	staff deploy	Staff tend
2-668.1	0	2500											12	
2-668.2	1500				7	22#+ danforths & heavy chain	3	2	1	SSS		extra line for scope	11	
2-668.3	0	6000			6	6/22+/danforths & stakes	6	3				hovercraft/airboat; very shallow draft Bbo	18	

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

Land access is from the private levee roads along the bay. They may be reached from Hwy 12 in Suisun City, then south on Grizzly Island road to Grizzly Island Wildlife Refuge. For further access and entry, contact Grizzly Island Wildlife Refuge (707-425-3828) or Suisun Resource Conservation District staff (707-525-9602). Nearest boat access is 3 miles southeast at McAvoys Marina, Bay Point (9 mi to Martinez, 7 mil to Pittsburg). This site includes the marshy islands off the mouth of Noyce Slough at the west edge of Dutton Island and east to include the mouth of Champion Slough. The property owners are the Grey Island Duck Club and the Wheeler Island Duck Club.

LAND ACCESS: ALL TYPES WHEN LEVEES ARE DRY

WATER LOGISTICS: VERY SHALLOW NEAR ISLAND, OBSTRUCTIONS

Limitations: depth, obstruction

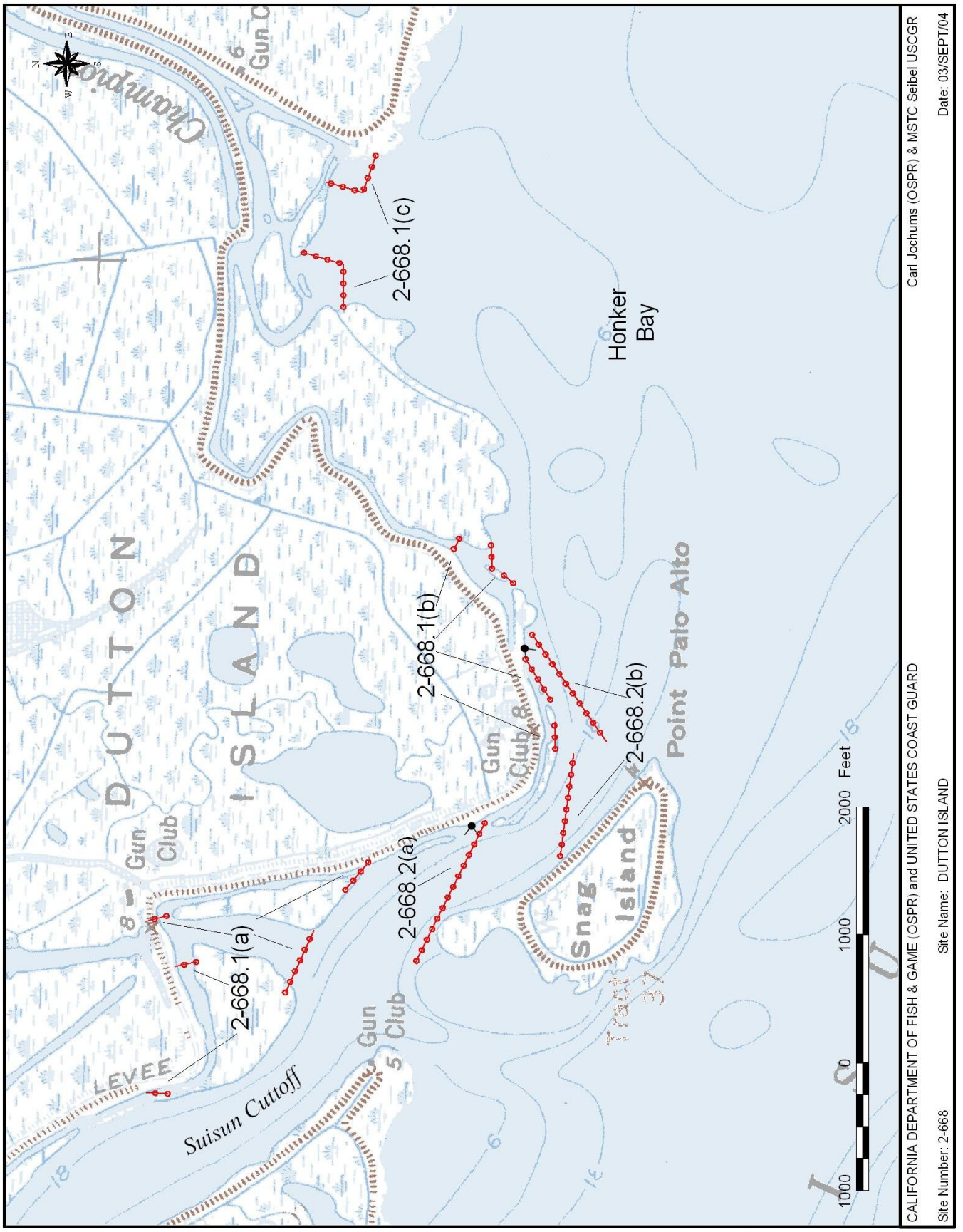
Launching, Loading, Docking and Services Available: Launch at McAvoy/Harris Marina at Bay Point. Pittsburg Marina. Martinez Marina.

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

The duck clubs have power and good small boat docking facilities. By their permission, staging may be possible there. Otherwise stage at Grizzly Island Wildlife Refug for land based resources. Stage at McAvoy-Harris's Yachet Club, Bay Point, or Pittsburg/ Martinez

COMMUNICATIONS PROBLEMS:

ADDITIONAL OPERATIONAL COMMENTS:



Harbor Boom
Swamp Boom
sss / sfs

Sorbent Boom
Other Boom
tsa / sps

Dike or Berm
Excellcior Fence
tba/voo

		Thomas Guide Location	Latitude N	Longitude W
County:	Solano		3 8 04	121 56.3
USGS Quad:	Honker Bay	NOAA Chart: SUISUN BAY 18658/18556/18656		

Last Page Update : 9/4/1997

SITE DESCRIPTION:

This site includes all the open waters of Honker Bay and its marsh perimeter. The bay is shallow (averaging less than six feet deep but is without obstuction except near shorelines where it can be very shallow. On most margins, there are barrow channels separating the historic marsh front from the current island levee. This results in a band of marshy islands with occasional passages though to the barrow channels and other historic marsh channels behind. Although there is some emergent marsh along the rip rapped island levee, the outer perimeter is a premium strip of native marsh. As a result, there are several hundred acres of undiked marsh and many miles of marshy margins. The outer bay margin is exposed to tangential wave action resulting is a mildly eroding shore with some accreting margins particularly in the northeast corner of the bay (North Honker Bay site 2-672). The land around Honker Bay is mostly held by private duck clubs. The response strategy here has been broken up into three separate divisions, because of the shoreline complexity and length, the logistics of response, and the likelihood that oil would impact at different timeframes on the different shores. The shoreline is subdivided into West Honker Bay (2-671) from Champion Slough to Rock Creek; North Honker Bay (2-672) in the northeast corner from Rock Creek to Spoonbill Creek; and East Honker Bay (2-673) the shore of Chipps island from Spoonbill Creek west. Most of these shores are mildly eroding, but in the northeast section is acreting.

SEASONAL and SPECIAL RESOURCE CONCERN

These marshy areas have A-protection priority at all times. Major seasonal concerns are the massive numbers of waterfowl which raft on the bay waters in the winter, and sensitive species of fish and salmonids which seasonally use or pass thought this area.

RESOURCES OF PRIMARY CONCERN

These marshy margins and berm islands have highest protection priority at all times. Oil must be prevented from entering barrow channels and interior sloughs by exclusion booming. These marshy areas are pristine to excellent habitat for all manner of marsh species.

The open water of honker bay is used by massive numbers of diving ducks, puddle ducks, and other water birds during the wintering season. The marshy margins are prime marsh bird and waterfowl habitat including Suisun song sparrow and possibly black rail.

These emergent marshes are inhabited by semi-aquatic mammals such as river otter, raccoon, beaver, and muskrat.

Fish using these waters include adults and juveniles of the various Delta species, including sensitive species: Delta smelt, longfin smelt, and winter-run chinook; major fish stocks move though this area: salmon, steel head, sturgeon, striped bass, American shad.

The emergent marshes here are typical tule-sedge mix with some cattail.

Several sensitive plants occur here: Mason's lilaeopsis, Suisun marsh aster.

CULTURAL, HISTORIC, and ARCHEOLOGICAL SENSITIVITIES

Contact the California Dept of Parks and Recreation - Office of Historic Preservation (Eric Allison -(916) 653-9125), and the Northwest Information Center, (Leigh Jordan, Sonoma State College ((707) 664-0880)) for specific information on historic or cultural resources in this area.

KEY CONTACTS: Trustee (T); Entry/Owner/Access (E); Cultural (C); or Other Assistance (O)

Type	Name / Title	Organization	Phone
B	Peter Baye, Ph.D. Coastal Plant Ecologist		(415) 310-5109
B	Laurie Briden	CA Dept of Fish & Game, Bay/Delta	(209) 955-7800
B	Brenda Grewell Restoration Ecologist	US Dept. of Agriculture	(530) 752-6260
TBELO	Grizzly Isl W/L Refuge	CA Dept. of Fish & Game	(707) 425-3828
B	Kent Nelson	CA Dept. of Water Resources	(916) 227-7581
B	Mary Shaw	CA Native Plant Society, Solano President	(707) 747-5481

ADDITIONAL SITE SUMMARY COMMENTS:

County and Thomas Guide Location	NOAA CHART	Latitude N	Longitude W
Solano	SUISUN BAY 18658/18556/18656	3 8 04	121 56.3

Last Page Update :

CONCERNS and ADVICE to RESPONDERS:

The marshes at the shoreline are home to many kinds of birds and animals, including some endanger plants, birds, and animals. The major concerns are two. First, there are opening and channels through which the oil can pass and harm even greater areas behind the bay front. Second, oil can get on the front edge of the marsh. Harm from response actions is always a concern. Try not to tromp oil into the soft ground. Keep in mind there are small endangered plants and animals underfoot.

HAZARDS and RESTRICTIONS:

There are shallows and obstructions along shore and inside the barrow channels. Honker Bay waves can be a navigation hazard when there are strong west winds.

SITE STRATEGIES

Strategy 2-671.1 **Objective: Exclude oil from entering barrow channels and slough entrances.** ACP DATE 9/4/1997

There are multiple breaks in the north shore which will allow oil to move into marshes behind. It will take at least 8 separate deployments of 8x8+ or 4X4+ Hboom (depending on severity of wave action) to close barrow channels and slough openings. Deploy in a chevron "V" formation with center anchors at each opening. Leaving enough trailing ends to insure a seal at the shore connection in order to prevent shortciruiting at low tides.

Strategy 2-671.2 **Objective: exclusion/deflection boom at the best angle fend oil past marshfront when heavy oil is approaching the shore - divert the oil to on-water skimming.** ACP DATE 9/4/1997

To deflect oil away from the shoreline, deploy 1700' of 8X8+ harbor boom from a point near Champion Slough mouth, at a diagonal to the current. Cascade as necessary. Advise IC and Ops for possible coordination of deflection with on-water skimming operations.

Strategy 2-671.3 **Objective: Protective Booming: If there is threat of heavy oiling and saturation of the marsh front, deploy protective boom coverage, when resource use will not preclude defending other sites against SO 5 and 6 impacts.** ACP DATE 9/4/1997

Protect windward shore from approaching oil. If there is a wind chop, this may best be accomplished using two layers of 4X4 swamp boom, else a single layer of 8X8+ Hboom: this strategy for deployment can be found in Potential Oil-Spill Protection Strategies for San Francisco Bay, California. (Hayes and Montelo, 1994). Requires 11,000' of Hboom or tidal barrier boom.

Table of Response Resources

strategy number	harbor boom	swamp boom	Other boom type	sorb boom	Anchoring no	Anchoring type and gear	Boom boat	Skiffs punts	Skimmers No	Skimmers Type	Special Equipment No and kinds	staff deploy	Staff tend
2-671.1	1300	700			6	6/12+/danforhts & stakes	2	4				15	
2-671.2	1700				3	3/22+/danforths	3	2				11	
2-671.3	11000				12	12/22+/danforths & stakes	4	4			hovercraft. air boat; 4 very shallow Bboat	20	

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

They may be reached from Hwy 12 in Suisun City, then south on Grizzly Island road to Grizzly Island Wildlife Refuge. For further access and entry, contact Grizzly Island Wildlife Refuge (707-425-3828) or Suisun Resource Conservation District staff (707-525-9602). Nearest boat access is 3 miles southeast at McAvoys Marina, Bay Point (9 mi to Martinez, 7 mil to Pittsburg). This site includes the 2 miles of bay frontage and berm islands of Wheeler Island from Champion Slough to Rock Creek. The land is owned by nine gun clubs.

LAND ACCESS: ALL TYPES WHEN LEVEES ARE DRY

WATER LOGISTICS: VERY SHALLOW DRAFT < 2' NEAR SHORE.

Limitations: depth, obstruction

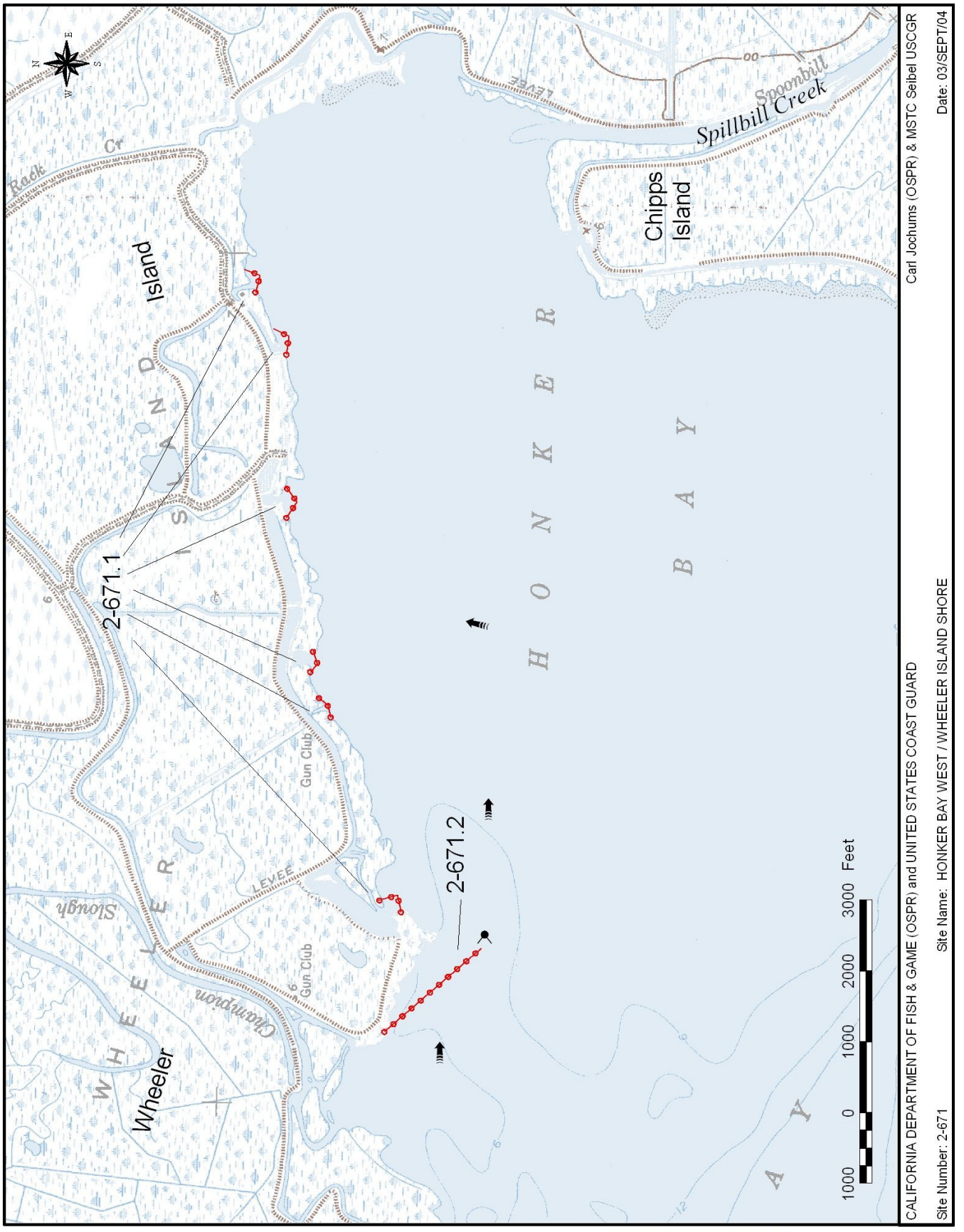
Launching, Loading, Docking and Services Available: McAvoy/Harris Marina at Bay Point. Pittsburg Marina. Martinez Marina.

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

The duck clubs have power and good small boat docking facilities.

COMMUNICATIONS PROBLEMS:

ADDITIONAL OPERATIONAL COMMENTS:



Harbor Boom
Swamp Boom
sss / sfs

Sorbent Boom
Other Boom
tsa / sps

Dike or Berm
Excellcior Fence
tba/voo

County and Thomas Guide Location	NOAA CHART	Latitude N	Longitude W
Solano	SUISUN BAY 18658/18556/18656	3 8 04	121 56.3

Last Page Update :

CONCERNS and ADVICE to RESPONDERS:

The marshes at the shoreline are home to many kinds of birds and animals, including some endanger plants, birds, and animals. The major concerns are two. First, there are opening and channels through which the oil can pass and harm even greater areas behind the bay front. Second, oil can get into the front edge of the marsh. Clean up here would be extremely difficult. Harm from response actions is always a concern. Try not to "walk" oil into the soft ground. Keep in mind there are small endangered plants and animals underfoot.

HAZARDS and RESTRICTIONS:

There are shallows and obstructions along shore and inside the barrow channels.

SITE STRATEGIES

Strategy 2-672.1 **Objective: Exclude/collect oil: exclude from entering Spoonbill Creek and barrow channels and divert to collection on Van Sickle Isl shore.** ACP DATE 9/4/1997

(site a) Deploy 800' 8X8+ Hboom from Chipps Island across the mouth o fSpoonbill Creek at best angle to collect oil at the Van Sickle Shore. Establish Shore Side Skimming (SSS). Repeat deployment if currents or waves are likely to overtop or underflow collection boom.
(sites b, c, & d) Close the openings to barrow channels using two layers of swamp boom, backed by sorbent boom. Anchor close to shore leaving trailing ends to insure a boom seal at shoreline (to prevent short-circuiting past boom.)

Strategy 2-672.2 **Objective: Deflect to collection site: use prevailing winds** ACP DATE 9/4/1997

Establish a second shore side skimming point on Van Sickle Island. Deploy deflection booms at best angle to direct oil past marshfronts to collection. Use about 1500' of 8X8+ harbor boom to direct oil to shore and about 500' to deflect oil into the pocket from the north. Line the shore with sorbents. This site has extreme shallows and obstructions - particularly at lower tides. Deployment will need to be made during higher tide phase. Boomboats capable of withstanding grounding must be used here.

Strategy 2-672.3 **Objective: Protective Booming: If there is threat of heavy oiling and saturation of the marsh front, deploy protective boom coverage, when resource use will not preclude defending other sites against SO 5 and 6 impacts.** ACP DATE 9/4/1997

Deploy exclusion/deflection boom at the best angle fend oil past marshfront to designated collection area. Protect windward shore from approaching oil. If there is a wind chop, this may best be accomplished using two layers of 4X4 Hboom, else a single layer of 8X8+: this strategy for deployment can be found in Potential Oil-Spill Protection Strategies for San Francisco Bay, California. (Hayes and Montelo, 1994). Requires 12,000' of Hboom or tidal barrier boom.

Table of Response Resources

strategy number	harbor boom	swamp boom	Other boom type	sorb boom	Anchoring no	Anchoring type and gear	Boom boat	Skiffs punts	Skimmers No	Skimmers Type	Special Equipment No and kinds	staff deploy	Staff tend
2-672.1	800	300		300	8	8/12+/danforths	2	2	1	SSS		10	
2-672.2	2000			500	5	5/22+/danforths w chain	2	1	1	SSS	hovercraft. airboat	8	
2-672.3	12000				12	12/22+/danforths & stakes	4	6			very shallow Bboat. hovercraft/airboat	25	

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

They may be reached from Hwy 12 in Suisun City, then south on Grizzly Island road to Grizzly Island Wildlife Refuge. For further access and entry, contact Grizzly Island Wildlife Refuge (707-425-3828) or Suisun Resource Conservation District staff (707-525-9602). Nearest boat access is 3 miles southeast at McAvoys Marina, Bay Point (9 mi to Martinez, 7 mil to Pittsburg). This site includes the 2 miles of bay frontage and marshy islands of Wheeler Island Rock Creek to Spoonbill Creek.

LAND ACCESS: ALL TYPES WHEN LEVEES ARE DRY

WATER LOGISTICS: VERY SHALLOW DRAFT < 2' NEAR SHORE.
Limitations: depth, obstruction

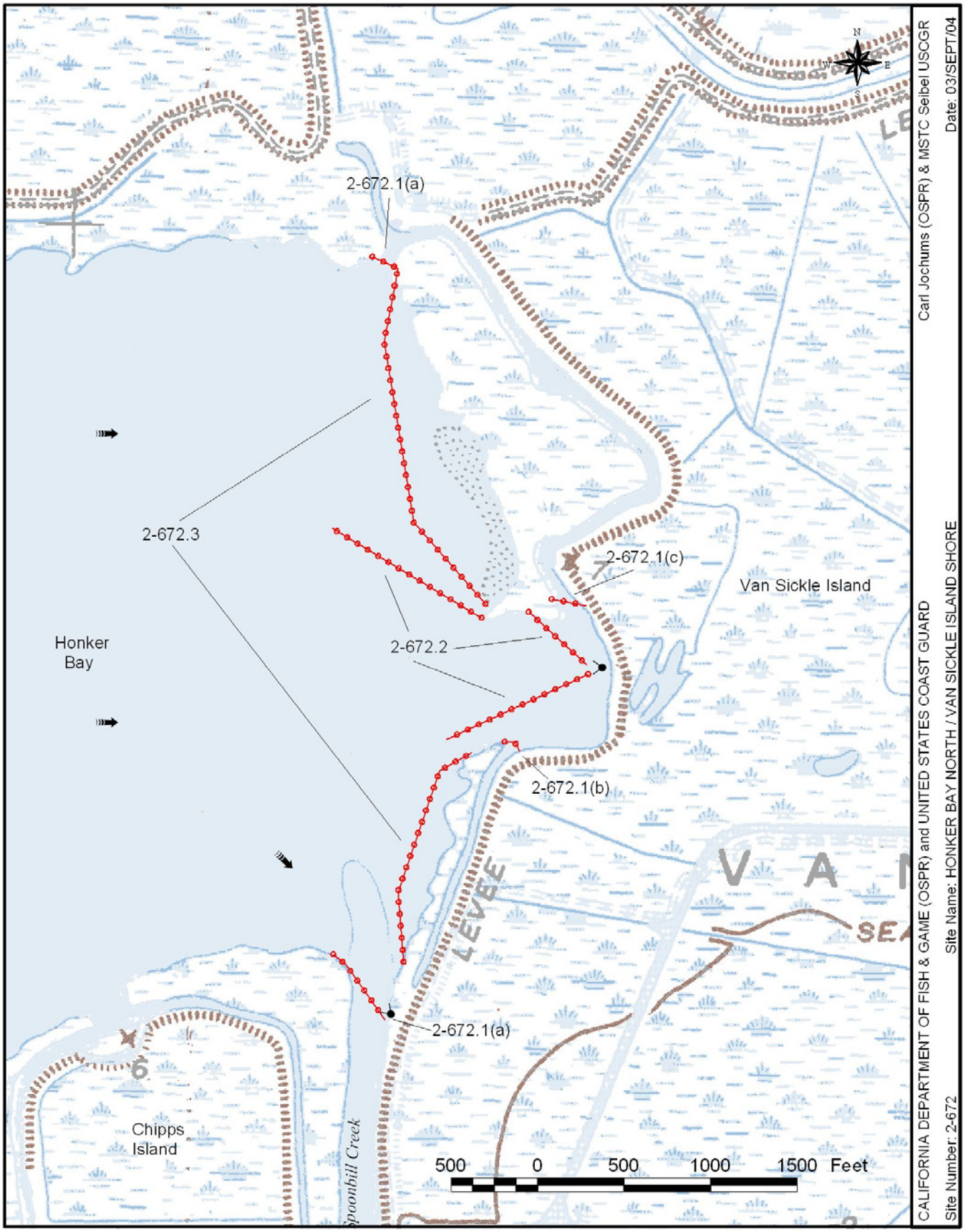
Launching, Loading, Docking and Services Available: McAvoy/Harris Marina at Bay Point. Pittsburg Marina. Martinez Marina. All boat services and fuel are available.

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

The duck clubs have power and good small boat docking facilities. Best staging is probably McAvoys Marina at Bay Point. Martinez and Pittsburg would be secondary alternatives. All have full services.

COMMUNICATIONS PROBLEMS:

ADDITIONAL OPERATIONAL COMMENTS:



Harbor Boom
Swamp Boom
sss / sfs

Sorbent Boom
Other Boom
tsa / sps

Dike or Berm
Excellcior Fence
tba/voo

County and Thomas Guide Location	NOAA CHART	Latitude N	Longitude W
Solano	SUISUN BAY 18658/18556/18656	3 8 04	121 56.3

Last Page Update :

CONCERNS and ADVICE to RESPONDERS:

The marshes at the shoreline are home to many kinds of birds and animals, including some endanger plants, birds, and animals. The major concerns are two. First, there are opening and channels through which the oil can pass and harm even greater areas behind the bay front. Second, oil can get on the front edge of the marsh. Harm from response actions is always a concern. Try not to tread oil into the soft ground. Keep in mind there are small endangered plants and animals underfoot.

HAZARDS and RESTRICTIONS:

There are shallows and obstructions along shore and inside the barrow channels.

SITE STRATEGIES

Strategy 2-673.1 **Objective: Exclude oil from entering barrow channels and slough entrances.** ACP DATE 9/4/1997

Close the two openings to the barrow channel.
(Site a) Use two layers of swamp boom (600' + 550' of 4X4+), backed with sorbent boom (500'), to exclusion boom the south opening. Anchor boom across channel entries and leave a trailing end to make a tidal seal. Observe and repeat if wind chop is overwhelming the boom. There are submerged pilings in this area.
(Site b) The north opening must be boomed both at the mouth (350' 4X4+) and inside where the two barrow channels branch off (100' each).

Strategy 2-673.2 **Objective: At Pt Simmons, deflect the oil past site to keep oil in channel and to avert carry-back into Honker Bay on eddy.** ACP DATE 9/4/1997

Deploy deflection boom (600') at Simmons Pt on a shallow contour to keep oil in the channel best and stop it from angle fend oil pastmarshfront to designated collection area. BEWARE: This area west of Simmons Point is an underground pipe corridor - use anchors with extreme caution!

Strategy 2-673.3 **Objective: Protective Booming: If there is threat of heavy oiling and saturation of the marsh front, deploy protective boom coverage, when resource use will not preclude defending other sites against SO 5 and 6 impacts.** ACP DATE 9/4/1997

Deploy exclusion/deflection boom at the best angle fend oil past marshfront to designated collection area. Protect windward shore from approaching oil. If there is a wind chop, this may best be accomplished using two layers of 4X4 Hboom, else a single layer of 8X8+: this strategy for deployment can be found in Potential Oil-Spill Protection Strategies for San Francisco Bay, California. (Hayes and Montelo, 1994). Requires 13,000' of Hboom or tidal barrier boom.

Table of Response Resources

strategy number	harbor boom	swamp boom	Other boom type	sorb boom	Anchoring no	Anchoring type and gear	Boom boat	Skiffs punts	Skimmers No	Skimmers Type	Special Equipment No	Special Equipment and kinds	staff deploy	Staff tend
2-673.1	0	1700		500	20	3/12+& 2/5#+danforth & 15 stakes	1	1					5	
2-673.2	600				3	3/22+/danforth w chain	1	1					11	
2-673.3	13000						6	6				shallow Bboats, 1 hovercraft/airboat	25	

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

There is only water access to Chipps Island. Nearest boat access is 2 miles southwest at McAvoys Marina, Bay Point (8 mi to Martinez, 5 mi to Pittsburg). This site includes the 2 miles of bay frontage on the western side of Chipps Island including the barrow channel behind the bay frontage.

LAND ACCESS: ALL TYPES WHEN LEVEES ARE DRY

WATER LOGISTICS: VERY SHALLOW DRAFT < 2' NEAR SHORE.
Limitations: depth, obstruction

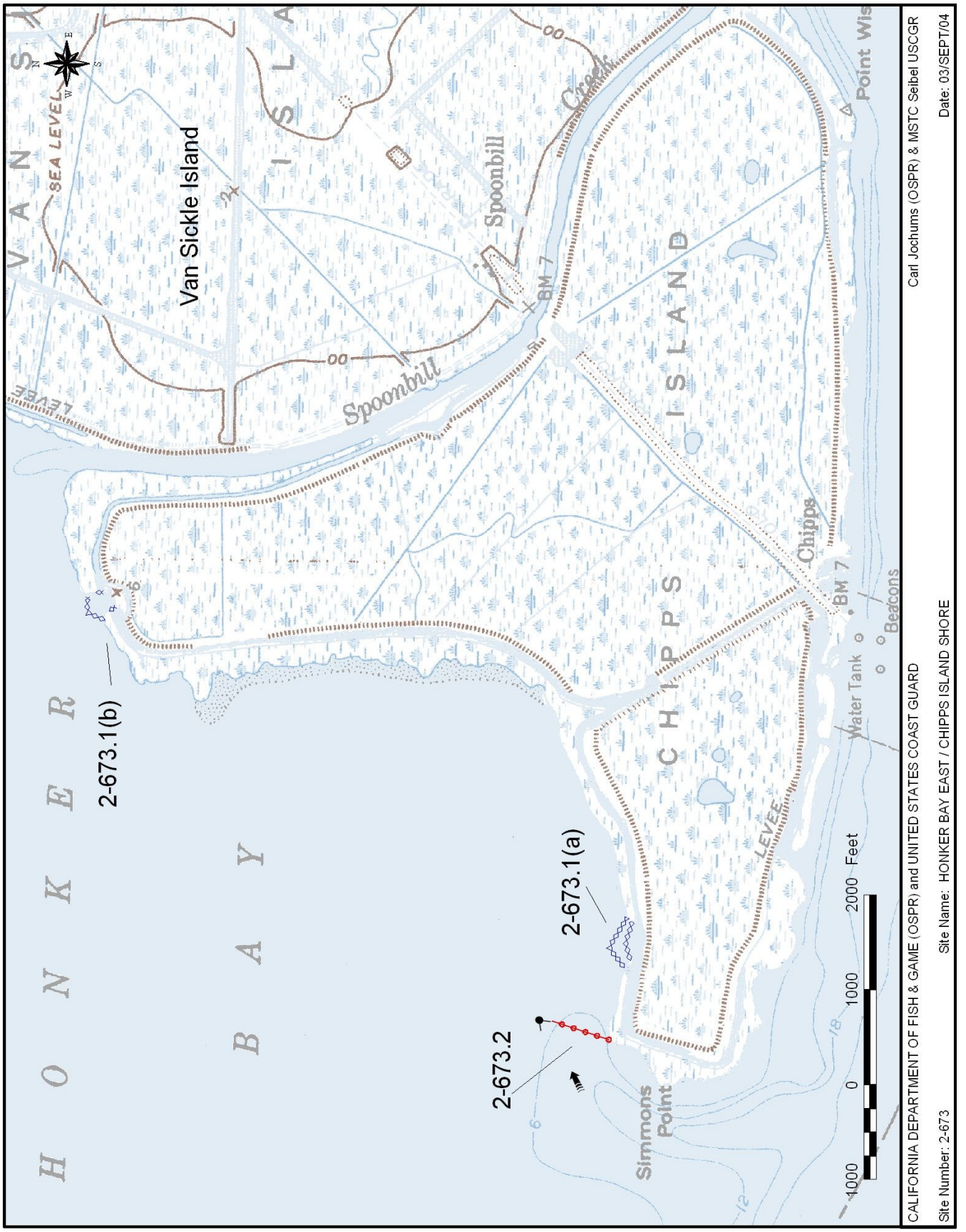
Launching, Loading, Docking and Services Available: McAvoy/Harris Marina at Bay Point. Pittsburg Marina. Martinez Marina.

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

Best staging sites are nearby McAvoy/Harris Marina at Bay Point. PG&E, Pittsburg Marina, and Martinez Marina are alternates. The duck clubs on Chipps Island have power and good small boat docking facilities.

COMMUNICATIONS PROBLEMS:

ADDITIONAL OPERATIONAL COMMENTS:



Harbor Boom
Swamp Boom
sss / sfs

Sorbent Boom
Other Boom
tsa / sps

Dike or Berm
Excellcior Fence
tba/voo

2-680 -A Site Summary- Suisun Marsh West: Suisun Slough Drainage 2-680 -A

		Thomas Guide Location	Latitude N	Longitude W
County:	Solano		3 8 10	122 05
USGS Quad:	Benicia/Vine Hill/Fairfild/Cordelia	NOAA Chart:	SUISUN BAY 18657/18652	

Last Page Update : 10/5/1997

SITE DESCRIPTION:

This site extends upstream from the mouth at Grizzly Bay and includes all the marshy areas and sloughs which are tributary including Goodyear Slough, Cordelia Slough, Wells Slough, Pelfier Slough, Sheldrake Slough, Boynton Slough, Peytonia Slough, Hill Slough, Cutoff Slough. This site includes about one third of Suisun Marsh which is about 50% of SF Bay marshland. It is diked and partially diked salt marsh with emergent tule marsh on slough margins. Some locales are in natural historic condition. Many Special Status Species are present. Most of the land is private duck clubs but large tracts are in public ownership including California State wildlife refuges.

SEASONAL and SPECIAL RESOURCE CONCERN

This marsh has A-level protection priority at all times.

RESOURCES OF PRIMARY CONCERN

This extensive salt marsh has a A-protection priority. It ranks among the most valuable sites is California. It is saltgrass, pickleweed, and tule/sedge dominated.

Extensive waterfowl, shorebirds and marsh birds use of this area for feeding and resting. Special Status bird species here include California clapper rail, black rail, Suisun song sparrow, and Suisun common yellowthroat.

Special Status animals: saltmarsh harvest mouse, Suisun ornate shrew, and western pond turtle. There is a full range of semi-aquatic species inhabiting this area including muskrat, beaver, river otter, and mink.

These waterways are nursery and smolting areas for a wide variety of fish stocks and several Special Status Species: Delta Smelt, Sacramento splittail, Winter-run Chinook.

A large number of Special Status plant species occur here including Suisun marsh aster, Mason's lilaeopsis, Delta tule pea, Suisun thistle, and soft birds beak.

CULTURAL, HISTORIC, and ARCHEOLOGICAL SENSITIVITIES

Contact the California Dept of Parks and Recreation - Office of Historic Preservation (Eric Allison -(916) 653-9125), and the Northwest Information Center, (Leigh Jordan, Sonoma State College ((707) 664-0880)) for specific information on historic or cultural resources in this area.

KEY CONTACTS: Trustee (T); Entry/Owner/Access (E); Cultural (C); or Other Assistance (O)

Type	Name / Title	Organization	Phone
	Laurie Briden	CA Dept of Fish & Game, Bay/Delta	(209) 955-7800
	Brenda Grewell Restoration Ecologist	US Dept. of Agriculture	(530) 752-6260
	Grizzly Isl W/L Refuge	CA Dept. of Fish & Game	(707) 425-3828
	Kent Nelson	CA Dept. of Water Resources	(916) 227-7581

ADDITIONAL SITE SUMMARY COMMENTS:

County and Thomas Guide Location	NOAA CHART	Latitude N	Longitude W
Solano	SUISUN BAY 18657/18652	3 8 10	122 05

Last Page Update :

CONCERNS and ADVICE to RESPONDERS:

Primary is limiting the extent of oiling of marshy channels and oiling of vegetation and wildlife. The strategies are intended to "box" oil into a minimal exposure of channel and marsh.

HAZARDS and RESTRICTIONS:

There are shallows throughout the sloughs.

SITE STRATEGIES

Strategy 2-680.1 **Objective: Minimize spread of oil through channels: use multiple diversion booms to collection sites, and close all side sloughs.**

ACP DATE 10/5/1997

This is a generic strategy since exact origin of a spill is unknown but multiple threat locals exist including the entire Santa Fe Pacific pipeline corridor. Locate oil threat and set booms across sloughs above and below oil slick at a sufficient diagonal to avoid entrainment. Include extra length and midpoint anchoring to account severe tidal fluctuations. Repeat to insure capture. Set up collection with shoreside skimming at best available locale with land access if possible. Otherwise use waterbased skimmers with booms anchored to shoreline.

Also, close any and all nearby slough mouths and branches, particularly Honker Cut and Connection Slough which would permit oil spreading to Montezuma Slough.

Table of Response Resources

strategy number	harbor boom	swamp boom	Other boom type	sorb boom	Anchoring no	Anchoring type and gear	Boom boat	Skiffs punts	Skimmers No	Skimmers Type	Special Equipment No and kinds	staff deploy	Staff tend
2-680.1	3000				24	24/22+/danforths	4	4	4	portable	Bboats; very shallow; 1 hovercraft	14	

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

This area is mostly accessible by water from Suisun City or Pierce Harbor. There is limited land access from I-680 by exiting at Lake Herman, Marsh view and other exits which lead to access mostly private duck club roads along the margin. This site extends upstream from the mouth at Grizzly Bay and includes all the marshy areas and sloughs which are tributary including Goodyear Slough, Cordelia Slough, Wells Slough, Pelfier Slough, Sheldrake Slough, Boynton Slough, Peytonia Slough, Hill Slough, Cutoff Slough.

LAND ACCESS: VARIABLE DEPENDING ON LOCATION.

WATER LOGISTICS: EXTREME SHALLOW DRAFT AT LOWER TIDES
Limitations: depth, obstruction

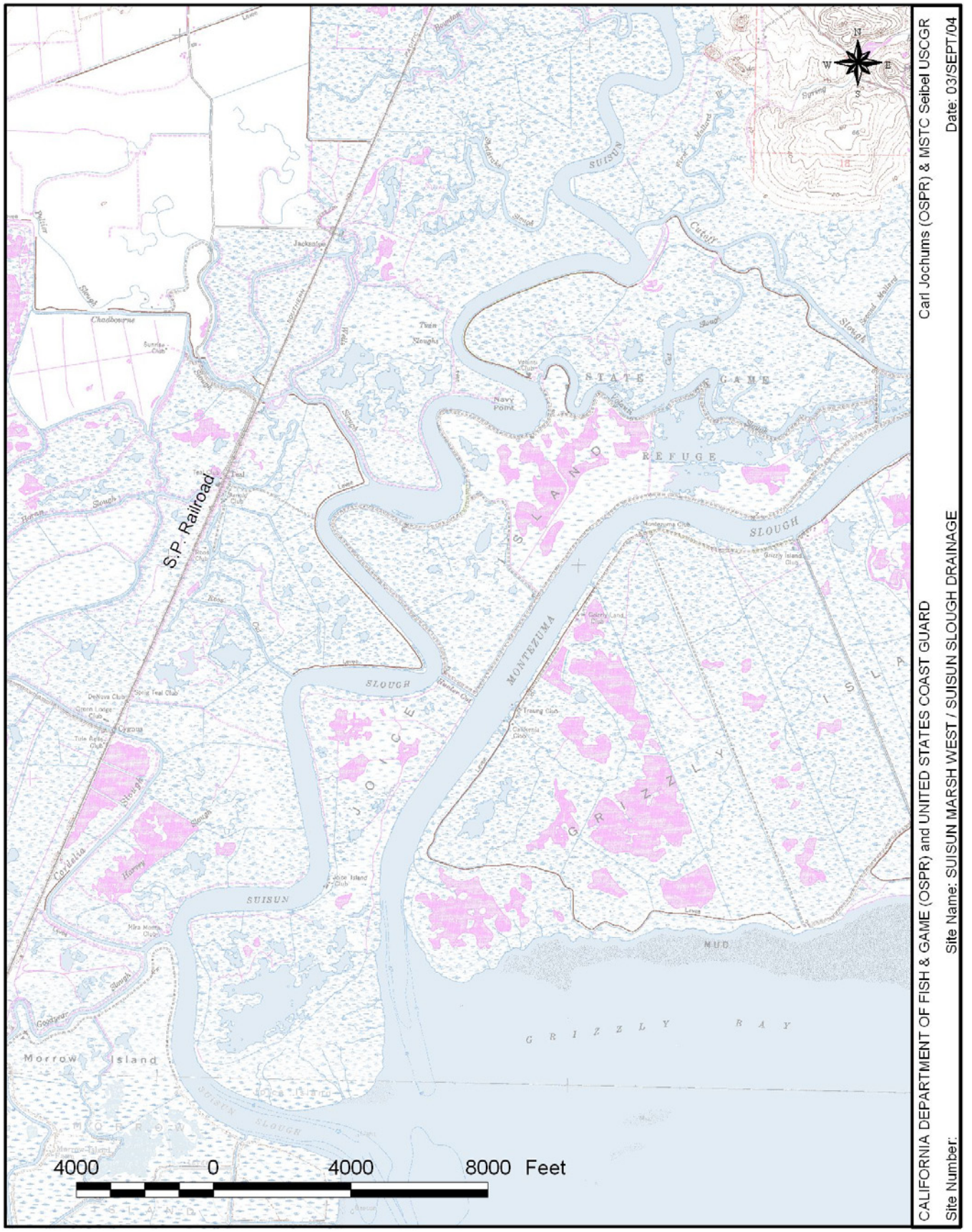
Launching, Loading, Docking and Services Available: Suisun City marinas and Pierce Harbor.

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

Deploy from Suisun City, Martinez Marina, Benicia Marina or Pierce harbor. All the above may provide adequate support for field post.

COMMUNICATIONS PROBLEMS:

ADDITIONAL OPERATIONAL COMMENTS:



Harbor Boom
Swamp Boom
sss / sfs

Sorbent Boom
Other Boom
tsa / sps

Dike or Berm
Excellcior Fence
tba/voo

2-690 -A Site Summary- Suisun Marsh Central: Grizzly Isl. / Montezuma Sl 2-690 -A

		Thomas Guide Location	Latitude N	Longitude W
County:	Solano		3 8 08	121 55
USGS Quad:	Fairfield/Honker Bay/Denverton	NOAA Chart:	SUISUN BAY 18652/18659/18656	

Last Page Update : 10/5/1997

SITE DESCRIPTION:

This site extends upstream from the mouth at Grizzly Bay and includes all the marshy areas and sloughs which are tributary including to Montezuma Slough including Cutoff Slough, Tree Slough, Island Slough, Frost Slough, Cross Slough, Roaring River Slough but not Nurse / Denverton Sloughs. This site includes about one half of Suisun Marsh which is about 50% of SF Bay marshland. It is diked and partially diked salt marsh with emergent tule marsh on slough margins. Some locales are in natural historic condition. Many Special Status Species are present. Most of the land is private duck clubs but large tracts are in public ownership including California State wildlife refuges and Solano County Refuges.

SEASONAL and SPECIAL RESOURCE CONCERN

This marsh has A-level protection priority at all times.

RESOURCES OF PRIMARY CONCERN

This extensive salt marsh has a A-protection priority. It ranks among the most valuable sites is California. It is saltgrass, pickleweed, and tule/sedge dominated. There are also upland areas which harbor remnant communities of native plants (Rush Ranch).

Extensive waterfowl, shorebirds and marsh birds use of this area for feeding and resting. Special Status bird species here include black rail, Suisun song sparrow, Suisun common yellowthroat, and California clapper rail.

Special Status animals: saltmarsh harvest mouse, Suisun ornate shrew and western pond turtle. There is a full range of semi-aquatic species inhabiting this area including muskrat, beaver, river otter, mink, reptiles, and tule elk.

These waterways are nursery and smolting areas for a wide variety of fish stocks and several Special Status Species: Delta Smelt, Sacramento splittail, Winter-run Chinook.

A large number of Special Status plant species occur here including Suisun marsh aster, Suisun thistle, soft birds beak, Delta tule pea and Mason's lilaeopsis.

CULTURAL, HISTORIC, and ARCHEOLOGICAL SENSITIVITIES

Contact the California Dept of Parks and Recreation - Office of Historic Preservation (Eric Allison -(916) 653-9125), and the Northwest Information Center, (Leigh Jordan, Sonoma State College ((707) 664-0880)) for specific information on historic or cultural resources in this area.

KEY CONTACTS: Trustee (T); Entry/Owner/Access (E); Cultural (C); or Other Assistance (O)

Type	Name / Title	Organization	Phone
B	Laurie Briden	CA Dept of Fish & Game, Bay/Delta	(209) 955-7800
B	Brenda Grewell Restoration Ecologist	US Dept. of Agriculture	(530) 752-6260
TBELO	Grizzly Isl W/L Refuge	CA Dept. of Fish & Game	(707) 425-3828
B	Kent Nelson	CA Dept. of Water Resources	(916) 227-7581
B	Mary Shaw	CA Native Plant Society, Solano President	(707) 747-5481

ADDITIONAL SITE SUMMARY COMMENTS:

County and Thomas Guide Location	NOAA CHART	Latitude N	Longitude W
Solano	SUISUN BAY 18652/18659/18656	3 8 08	121 55

Last Page Update :

CONCERNS and ADVICE to RESPONDERS:

Primary concern is to halt movement of oil into or out of the sloughs. The strategies are intended to "box" oil into a minimal exposure of channel and marsh. The marshe here and the marshy margins are full of creature and plant which would be harmed by oil. Response activities can harm wildlife and plants as well. Keep in mind that there are endangered plants and animals under foot. Avoid tromping oil into soft ground.

HAZARDS and RESTRICTIONS:

There are shallows throughout the sloughs.

SITE STRATEGIES

Strategy 2-690.1 **Objective: Contain/exclude - minimize spread of oil through channels: use multiple diversion booms to collection sites, and close side channels.**

ACP DATE 10/5/1997

This is a generic strategy since the exact origin of an oil spill can not be predicted, and the east side pipeline corridor crosses several sloughs: Locate oil threat and set booms across sloughs above and below oil slick at a sufficient diagonal to avoid entrainment. Include extra length and midpoint anchoring to account severe tidal fluctuations. Repeat to insure capture. Set up collection with shoreside skimming at best available locale with land access if possible. Otherwise use waterbased skimmers with booms anchored to shoreline.

Also, close any and all nearby slough mouths and branches, particularly Honker Cut and Connection Slough which would permit oil spreading to Montezuma Slough.

Table of Response Resources

strategy number	harbor boom	swamp boom	Other boom type	sorb boom	Anchoring no	Anchoring type and gear	Boom boat	Skiffs punts	Skimmers No	Skimmers Type	Special Equipment No and kinds	staff deploy	Staff tend
2-690.1	0	4000			32	32/22+/danforths	5	8	4	portable	bboat: shallow draft; 1 hovercraft	31	

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

This area is mostly accessible by water from Suisun City or Pierce Harbor. There is limited land access from via Hwy 12 to Grizzly Island Road at Suisun City or Denverton Road (to the easterly portion). Most subsequent access is private duck club roads along the margin. This site extends upstream from the mouth at Grizzly Bay and includes all the marshy areas and sloughs which are tributary including to Montezuma Slough including Cutoff Slough, Tree Slough, Island Slough, Frost Slough, Cross Slough, Roaring River Slough but not Nurse / Denverton Sloughs.

LAND ACCESS: VARIABLE DEPENDING ON LOCATION.

WATER LOGISTICS: EXTREME SHALLOW DRAFT AT LOWER TIDES
Limitations: depth, obstruction

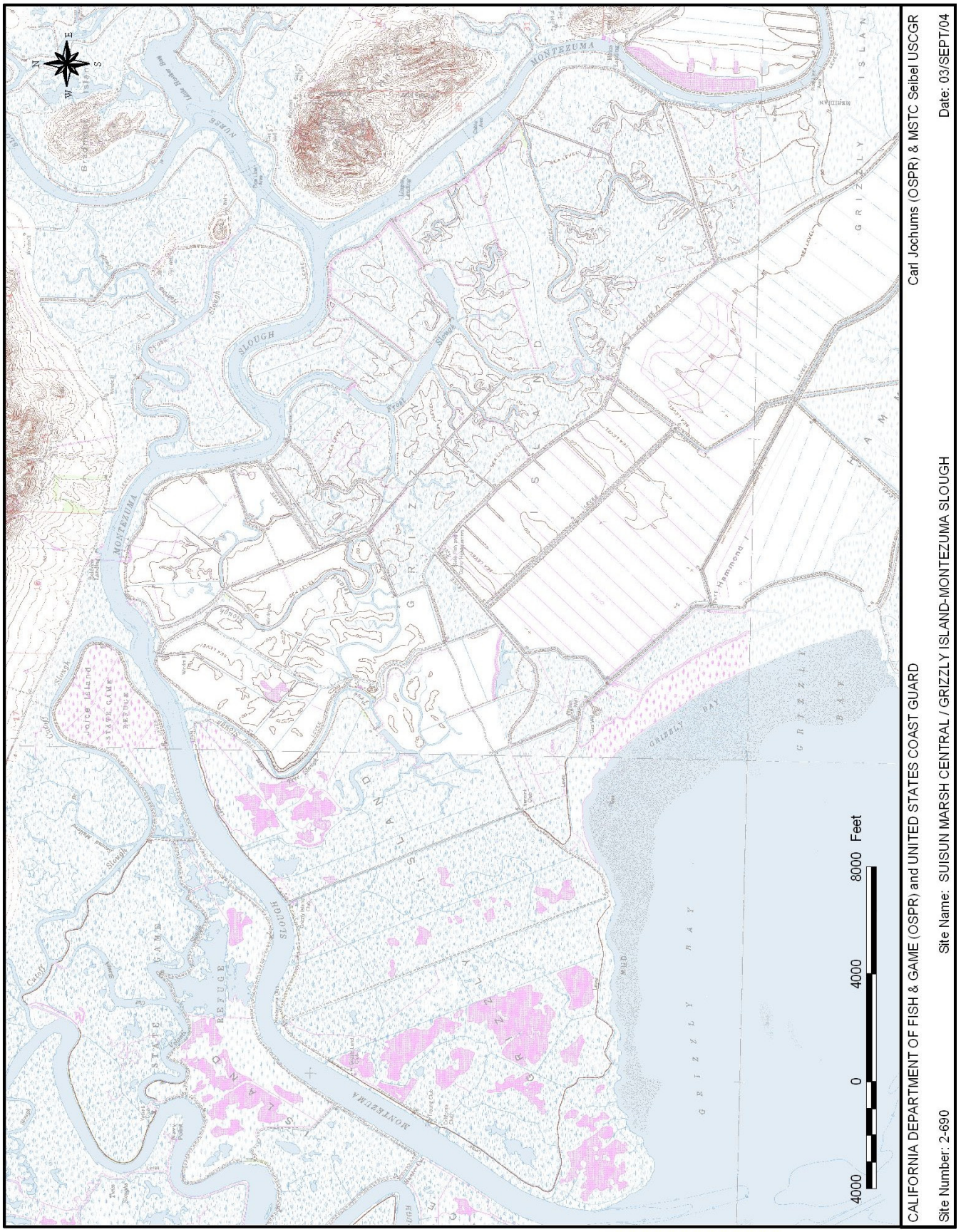
Launching, Loading, Docking and Services Available: There is a minimal boat ramp on Grizzly Island (parking lot 7) near Meins Landing. Otherwise, Suisun City marinas, Pittsburg, Martinez / Benicia and Pierce Harbor marinas.

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

Deploy from Suisun City, Martinez Marina, Benicia Marina or Pittsburg Marina. All the above may provide adequate support for field post, as may Grizzly Island Wildlife Refuge.

COMMUNICATIONS PROBLEMS:

ADDITIONAL OPERATIONAL COMMENTS:


CALIFORNIA DEPARTMENT OF FISH & GAME (OSPR) and UNITED STATES COAST GUARD
Carl Jochums (OSPR) & MSTC Seibel USCGR
Date: 03/SEPT/04
Site Number: 2-690
Site Name: SUISUN MARSH CENTRAL / GRIZZLY ISLAND-MONTEZUMA SLOUGH
4000 0 4000 8000 Feet
Harbor Boom
Swamp Boom
sss / sfs
Sorbent Boom
Other Boom
tsa / sps
Dike or Berm
Excellcior Fence
tba/voo

2-695 -A Site Summary- Suisun Marsh North: Denverton / Nurse Sl Drainage 2-695 -A

		Thomas Guide Location	Latitude N	Longitude W
County:	Solano		3 8 11	121 55
USGS Quad:	Denverton	NOAA Chart:	SUISUN BAY 18652/18656	

Last Page Update : 10/5/1997

SITE DESCRIPTION:

This site extends upstream from the mouth of Nurse Slough on Montezuma Slough and includes Denverton and Luco Sloughs and all the marshy areas and sloughs tributary. This site includes about one sixth of Suisun Marsh which is about 50% of SF Bay marshland. It is diked and partially diked salt marsh with emergent tule marsh on slough margins. Some locales are in natural historic condition. Many Special Status Species are present. Most of the land is private duck clubs but a few sites in public ownership.

SEASONAL and SPECIAL RESOURCE CONCERN

This marsh has A-level protection priority at all times.

RESOURCES OF PRIMARY CONCERN

This extensive salt marsh has a A-protection priority. It ranks among the most valuable sites is California. It is saltgrass, pickleweed, and tule/sedge dominated. There are also upland areas which harbor remnant communities of native plants.

Extensive waterfowl, shorebirds and marsh birds use of this area for feeding and resting. Special Status bird species include Suisun song sparrow.

Special Status mammal: saltmarsh harvest mouse. There is a full range of semi-aquatic species inhabiting this area including muskrat, beaver, river otter, mink.

These waterways are nursery and smolting areas for a wide variety of fish stocks and several Special Status Species: Delta Smelt, Sacramento splittail, Winter-run Chinook.

A large number of Special Status plant species occur here including Suisun marsh aster, Delta tule pea and Mason's lilaeopsis.

CULTURAL, HISTORIC, and ARCHEOLOGICAL SENSITIVITIES

Contact the California Dept of Parks and Recreation - Office of Historic Preservation (Eric Allison -(916) 653-9125), and the Northwest Information Center, (Leigh Jordan, Sonoma State College ((707) 664-0880)) for specific information on historic or cultural resources in this area.

KEY CONTACTS: Trustee (T); Entry/Owner/Access (E); Cultural (C); or Other Assistance (O)

Type	Name / Title	Organization	Phone
B	Laurie Briden	CA Dept of Fish & Game, Bay/Delta	(209) 955-7800
B	Brenda Grewell Restoration Ecologist	US Dept. of Agriculture	(530) 752-6260
TBELO	Grizzly Isl W/L Refuge	CA Dept. of Fish & Game	(707) 425-3828
B	Kent Nelson	CA Dept. of Water Resources	(916) 227-7581
B	Mary Shaw	CA Native Plant Society, Solano President	(707) 747-5481

ADDITIONAL SITE SUMMARY COMMENTS:

County and Thomas Guide Location	NOAA CHART	Latitude N	Longitude W
Solano	SUISUN BAY 18652/18656	3 8 11	121 55

Last Page Update :

CONCERNS and ADVICE to RESPONDERS:

Primary concern is to halt movement of oil into or out of the sloughs. The strategies are intended to "box" oil into a minimal exposure of channel and marsh. The marshe here and the marshy margins are full of creature and plant which would be harmed by oil. Response activities can harm wildlife and plants as well. Keep in mind that there are endangered plants and animals under foot. Avoid tromping oil into soft ground.

HAZARDS and RESTRICTIONS:

There are shallows throughout the sloughs.

SITE STRATEGIES

Strategy 2-695.1 **Objective: Confine/Exclude - Minimize spread of oil through channels: use multiple diversion booms to collection sites, and close side channels.**

ACP DATE 10/5/1997

This is a generic spill response strategy since it is not possible to predict the exact location of a spill origin, and a pipeline corridor lies on the east side of the site: Locate oil threat and set booms across sloughs above and below oil slick at a sufficient diagonal to avoid entrainment. Include extra length and midpoint anchoring to account severe tidal fluctuations. Repeat to insure capture. Set up collection with shoreside skimming at best available locale with land access if possible. Otherwise use waterbased skimmers with booms anchored to shoreline.

Also, close any and all nearby slough mouths and branches, particularly Honker Cut and Connection Slough which would permit oil spreading to Montezuma Slough.

Table of Response Resources

strategy number	harbor boom	swamp boom	Other boom type	sorb boom	Anchoring no	Anchoring type and gear	Boom boat	Skiffs punts	Skimmers No	Skimmers Type	Special Equipment No and kinds	staff deploy	Staff tend
2-695.1	0	2000			16	16/22+/danforths	3	6	4	portable	Bboat: shallow draft: 1 hovercraft	21	

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

This area is very inaccessible. There is limited land access via private duck club and military roads accessed from Hwy 12 to Shiloh Road (to the easterly edge) and Grizzly Island Road. Water access is from Montezuma Slough via Nurse Slough. This site extends upstream from the mouth of Nurse Slough on Montezuma Slough and includes Denverton and Luco Sloughs and all the marshy areas and sloughs tributary.

LAND ACCESS: MOSTLY FOOT, ATV, DEPENDING ON LOCATION

WATER LOGISTICS: EXTREME SHALLOW DRAFT AT LOWER TIDES

Limitations: depth, obstruction

Launching, Loading, Docking and Services Available: There is a minimal boat ramp on Grizzly Island (parking lot 7) near Meins Landing. Otherwise, Suisun City marinas, Pittsburg, Martinez / Benicia and Pierce Harbor marinas.

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

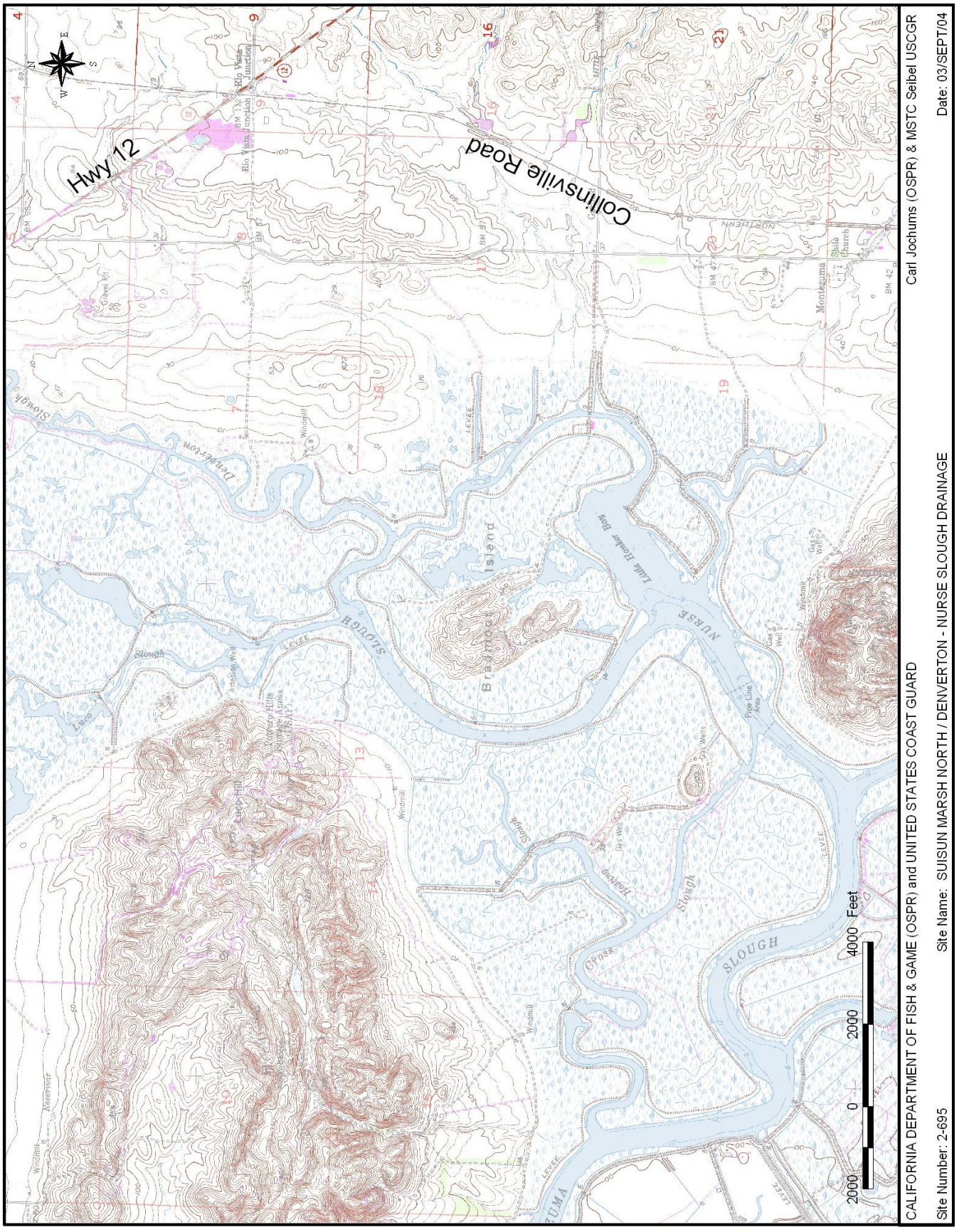
Deploy from Suisun City, Martinez Marina, Benicia Marina or Pittsburg Marina. All the above may provide adequate support for field post, as may Grizzly Island Wildlife Refuge.

COMMUNICATIONS PROBLEMS:

ADDITIONAL OPERATIONAL COMMENTS:

Strategy Diagram- Suisun Marsh North: Denverton / Nurse Sl Drainage

2-695 -A



Harbor Boom
Swamp Boom
sss / sfs

Sorbent Boom
Other Boom
tsa / sps

Dike or Berm
Excellcior Fence
tba/voo

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9846.2 Cultural and Other Resources at Risk

9846.21 Cultural Resources, Historic and Archeological Resources – see Section 9802.1, Section 9840 for contact table, and individual Site Summaries

9846.22 Essential Fish Habitat – see Section 9802.2

9846.23 Other Resources at Risk - This section is reserved for specialized information regarding natural resources that occur in this particular geographic area; such as: seasonal migratory waterfowl and shorebird locations and densities; salmonid fish migration periods; or special considerations for eelgrass beds.

Large numbers of migratory waterfowl and shorebirds winter in the Bay and Delta and in GRA 6 in particular. According to Audubon Christmas bird count surveys it is not uncommon to have about 100,000 waterfowl rafting on Grizzly Bay. Similar concentrations are common on Honker Bay, and smaller clusters of 100's are common in Carquinez Strait, around Roe and Ryer Islands and elsewhere.

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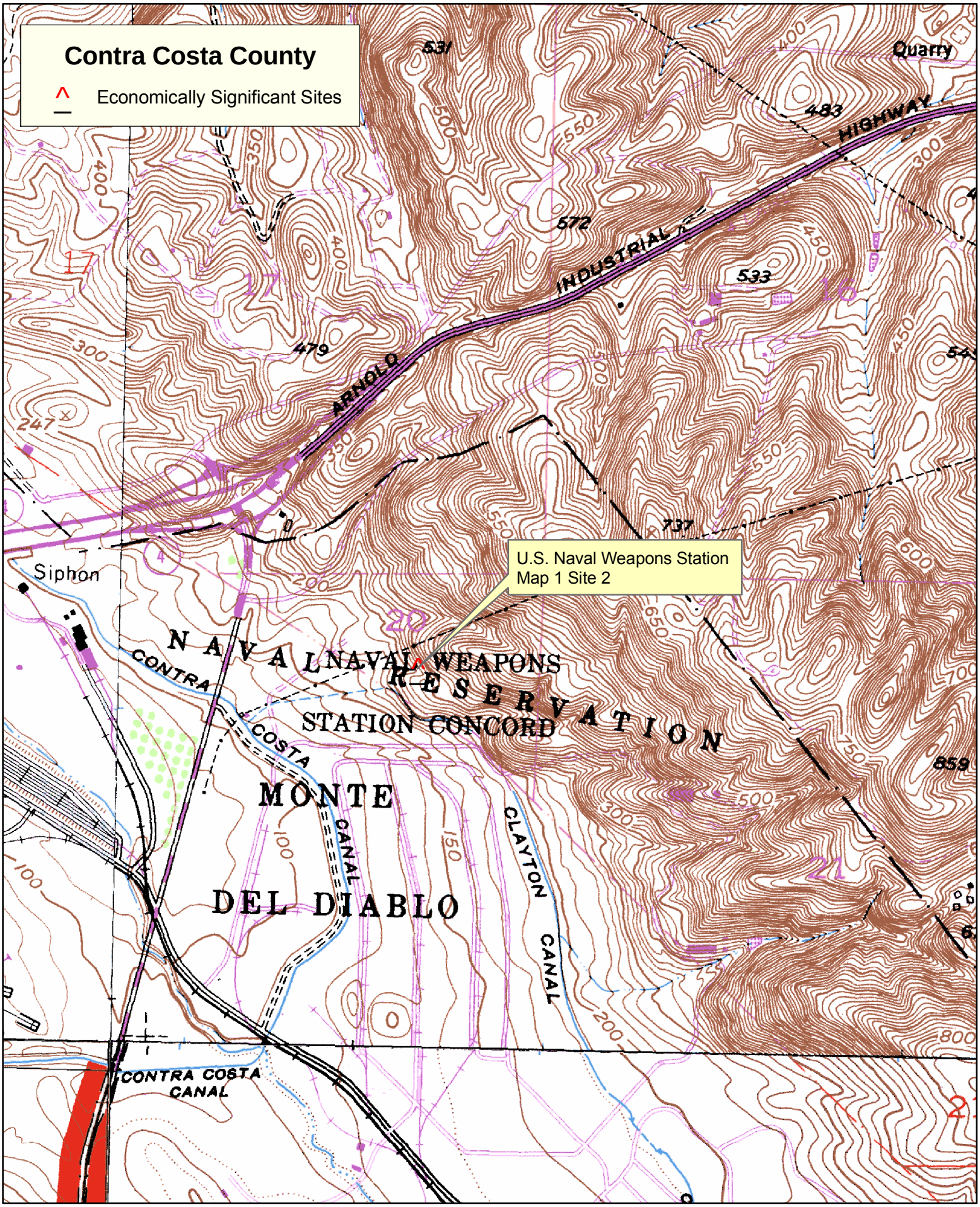
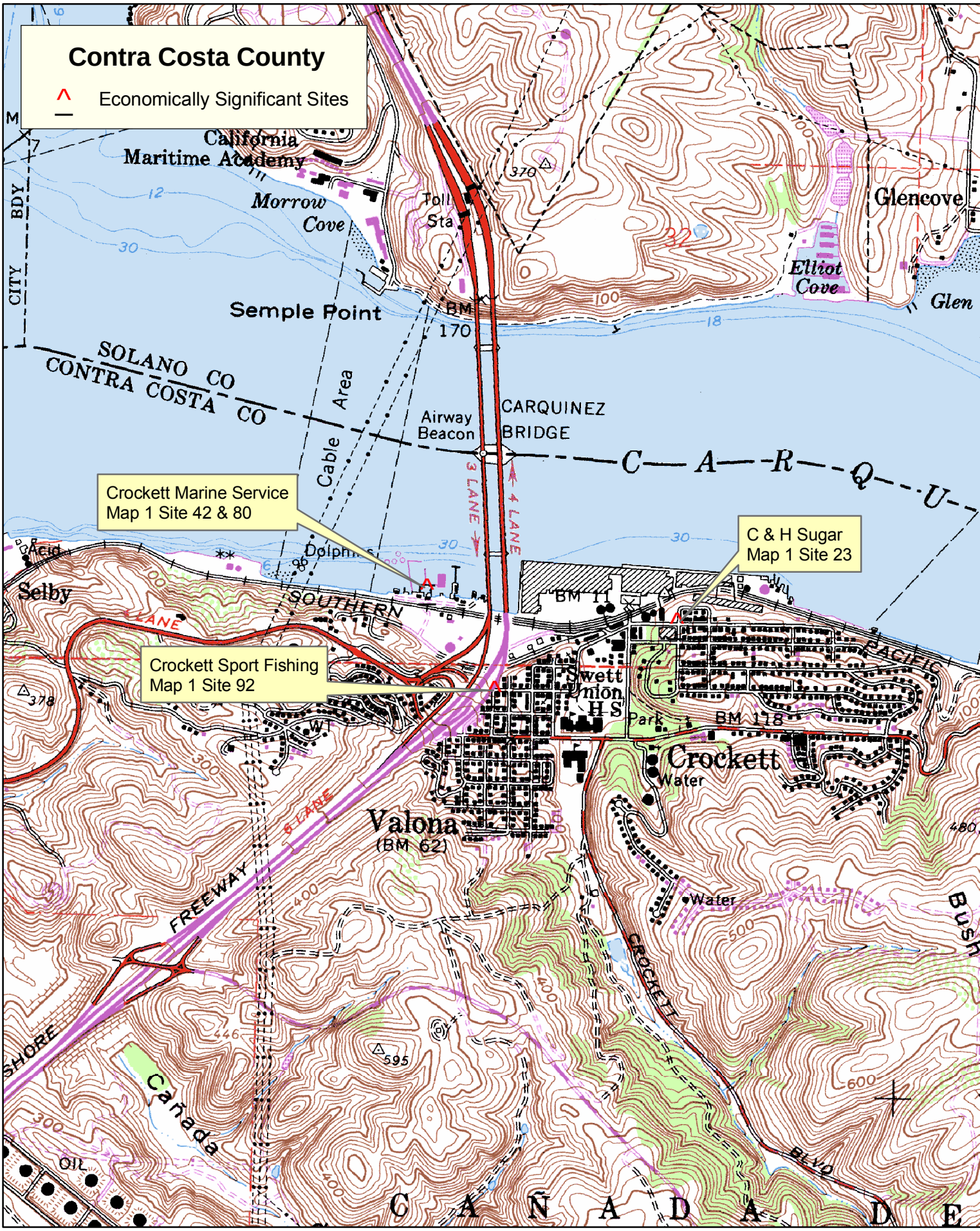
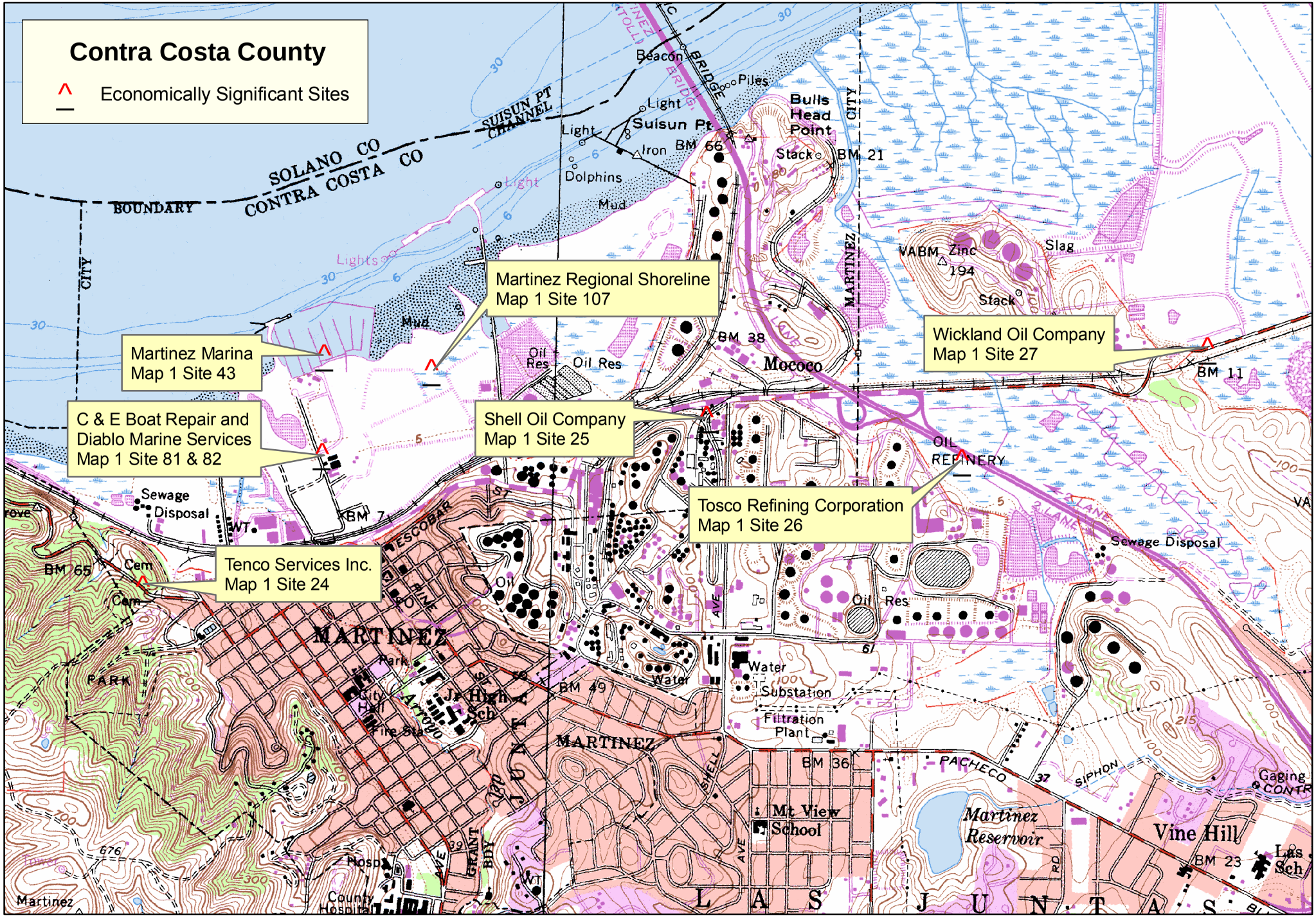
Economic Sites in GRA 6									
Line No.	Map Description	Site Name	Site Description	Latitude	Longitude	Economic Sensitivity	Site Function	Site Address	GIS Site No.
1	Map 1 Site 2 Contra Costa County	U.S. Naval Weapons Station Concord		38.01	-121.99	E	Munitions Storage, Ship/Rail Terminal		13001
2	Map 1 Site 23 Contra Costa County	C & H Sugar		38.06	-122.22	D	Sugar/Molasses Products	830 Loring Avenue, Crockett	13017
3	Map 1 Site 27 Contra Costa County	Wickland Oil Company	Martinez Terminal	38.03	-122.09	E	Petroleum Product	2801 Waterfront Road, Martinez	13021
4	Map 1 Site 45 Contra Costa County	McAvoy Yacht Harbor	(description does not match location)	38.04	-121.96	E	Small Craft Harbor	1001 McAvoy Road, Pittsburg	13038
5	Map 1 Site 46 Contra Costa County	Harris Yacht Harbor		38.04	-121.96	E	Small Craft Harbor	100 Trojan Road, Pittsburg	13039
6	Map 1 Site 15 Solano County	Glen Cove Waterfront Park and Marina	Carquinez Strait off S. Regatta Drive	38.07	-122.21	E	Boat Launching and Mooring Facilities		95008
7	Map 1 Site 16 Solano County	Benicia State Recreation Area Southhampton Bay	West of Hwy 780	38.07	-122.19	D	Coastal Access Property with Public Fishing Areas		95009
8	Map 1 Site 27 Solano County	Goodyear Slough Outfall	Dept of Water Resources, East of Vista Point	38.07	-122.12	E	Flood Control Gates		95019
9	Map 1 Site 28 Solano County	Morrow Island Distribution System	Dept of Water Resources	38.12	-122.09	E	Flood Control Gates		95020
10	Map 1 Site 29 Solano County	Suisun Resource Conservation District	Grizzly Island Road (check location)	38.15	-121.98	D	Water intakes within Suisun Marsh for Duck Ponds		95021
11	Map 1 Site 30 Solano County	Suisun City Boat Launching Ramp	Suisun Slough off Kellog Street	38.24	-122.04	E	Public Boat Ramp with Minimal Parking		95022
12	Map 1 Site 31 Solano County	Solano Yacht Club	Suisun Slough at End of Cedar Street	38.24	-122.04	E	Boat Launching, Mooring Facilities		95023
13	Map 1 Site 32 Solano County	Port Suisun	Suisun Slough off Solano Street	38.24	-122.04	E	Port		95024
14	Map 1 Site 33 Solano County	Joice Island Unit	Grizzly Island Road	38.16	-122.05	D	State Wildlife Area		95025
15	Map 1 Site 34 Solano County	Grizzly Island Wildlife Area	Grizzly Island Road	38.16	-121.97	D	State Wildlife Area		95026
16	Map 1 Site 35 Solano County	Fairfield/Suisun Wastewater Treatment Plant	Discharge Boynton Slough East of Chadbourne Road	38.20	-122.07	E	Treated Water Discharge Point with 28" Pipe		95027
17	Map 1 Site 36 Solano County	Roaring River Slough Distribution System	Simmons Wheeler, and Van Sickle Islands, Dept of Water Resources	38.10	-121.95	E	Flood Control Gate		95028
18	Map 1 Site 37 Solano County	Suisun Marsh Salinity Control Gates	Confluence of Roaring River & Montezuma Slough, Dept of Water Resources	38.09	-121.89	E	Salinity and Flood Control Gate		95029

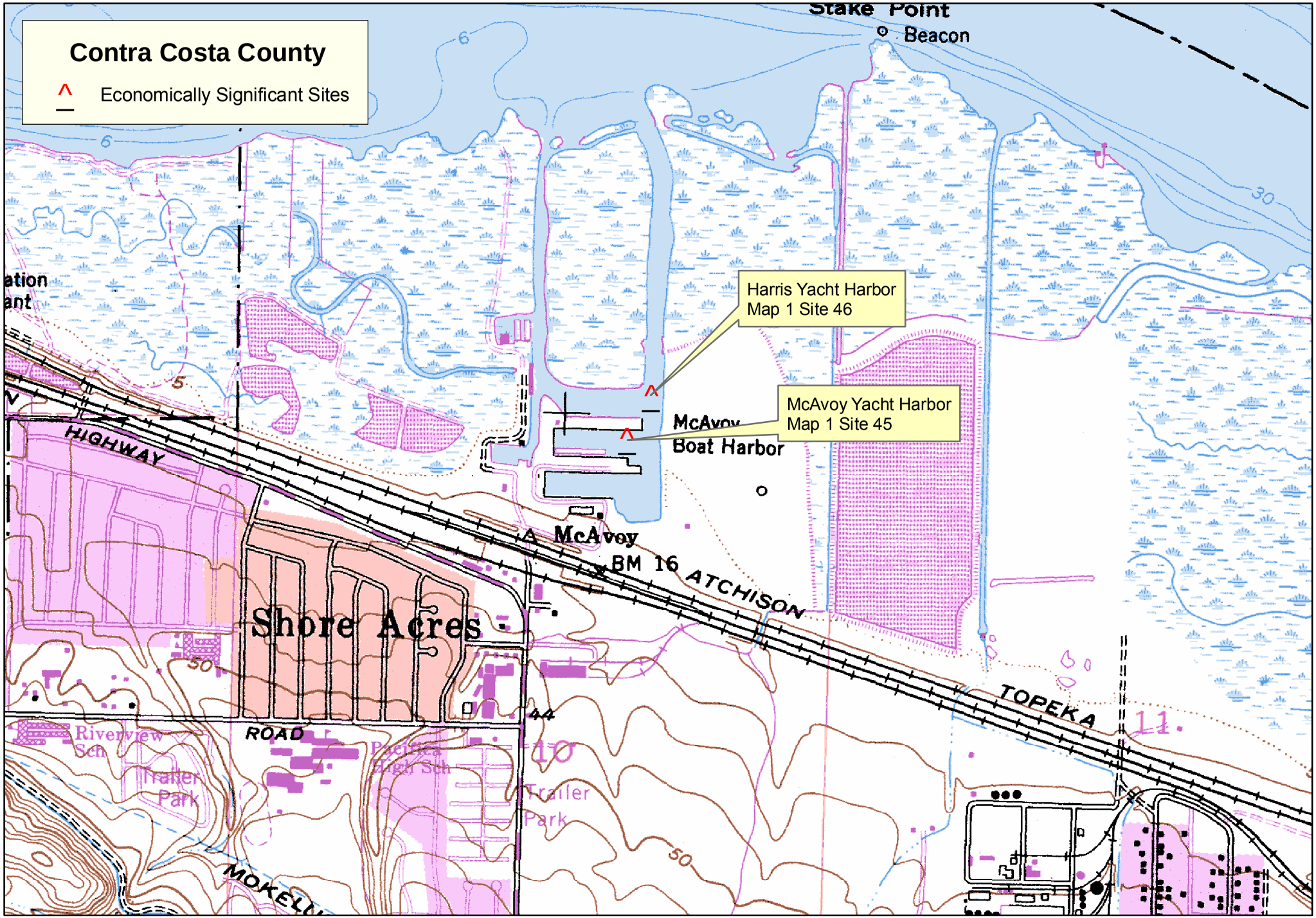


California Department of Fish and Game
Office of Spill Prevention and Response
Contra Costa County Layout 001

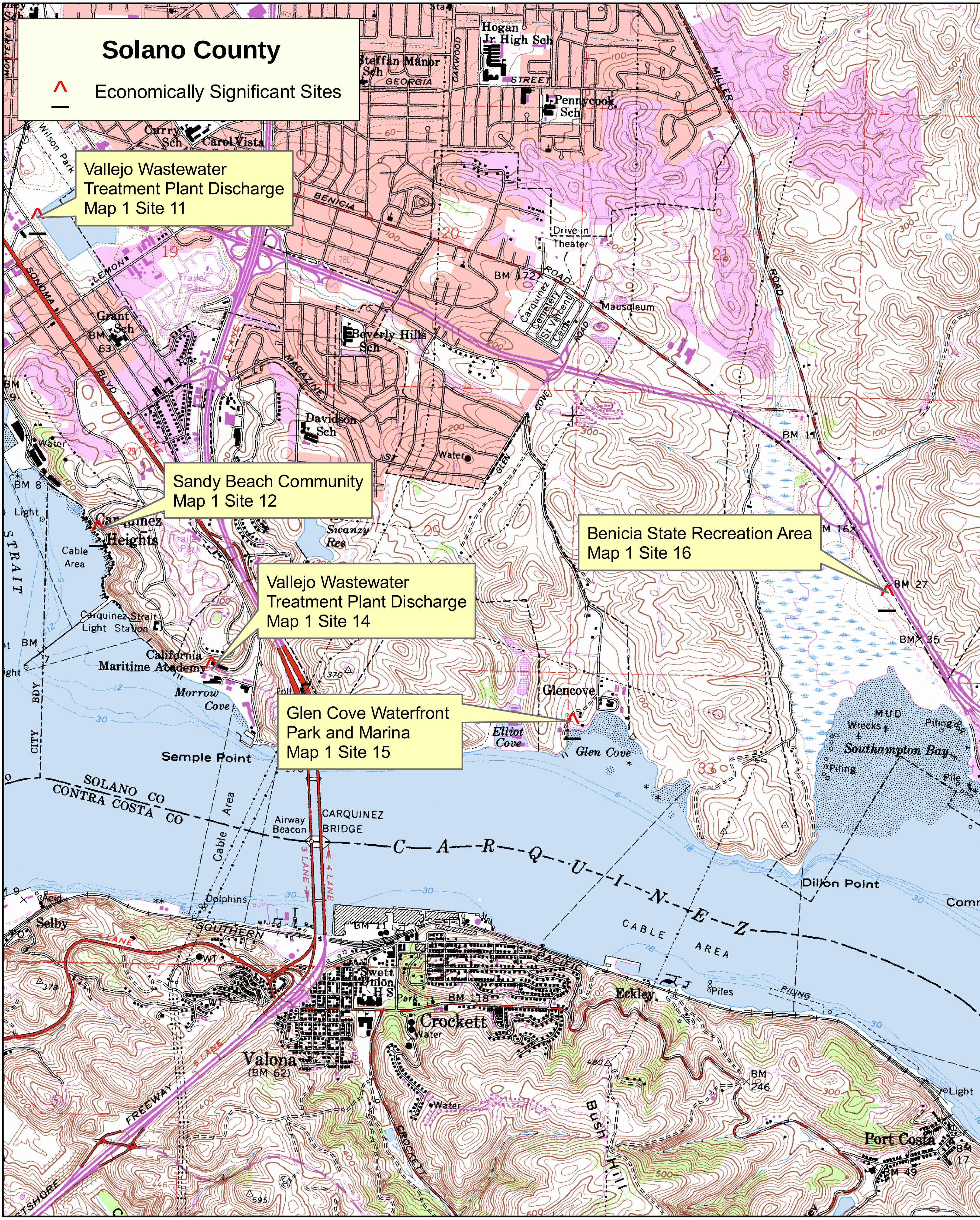

Contra Costa County
Economically Significant Sites
Crockett Marine Service
Map 1 Site 42 & 80
C & H Sugar
Map 1 Site 23
Crockett Sport Fishing
Map 1 Site 92
California Maritime Academy
Morrow Cove
Toll Sta
Glencove
Elliot Cove
Glen
Semple Point
BM 170
SOLANO CO
CONTRA COSTA CO
Cable Area
Airway Beacon
CARQUINEZ BRIDGE
C A R Q U
3 LANE
4 LANE
Selby
SOUTHERN PACIFIC
Swett Union H S
Park
BM 118
Crockett
Water
Valona
(BM 62)
FREEWAY
5 LANE
CROCKETT BLVD
Canada
C A N A D A D E
0.25 0 0.25 Miles
California Department of Fish and Gam
Office of Spill Prevention and Response
Contra Costa County Layout 005



California Department of Fish and Game
Office of Spill Prevention and Response
Contra Costa County Layout 006

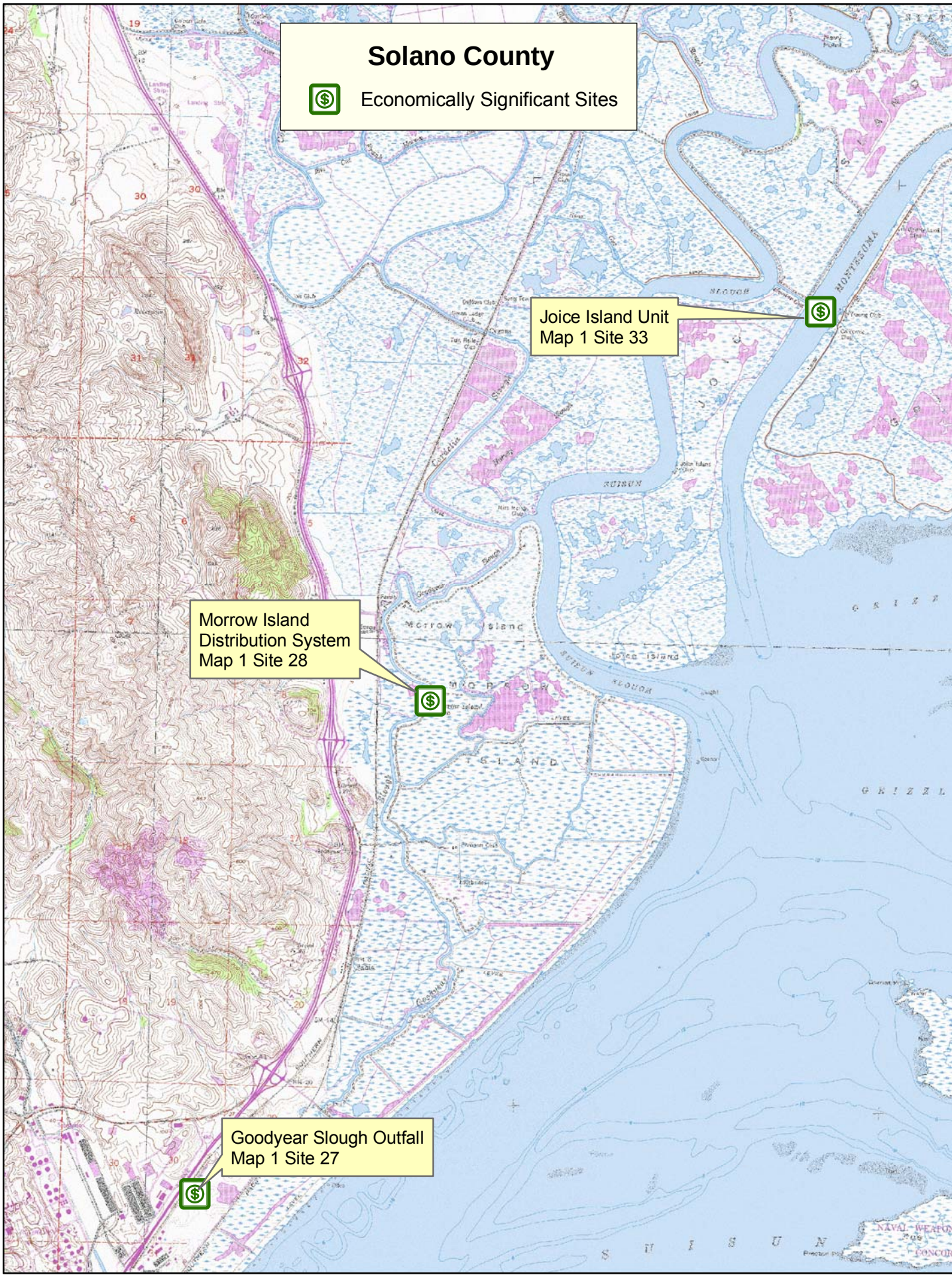


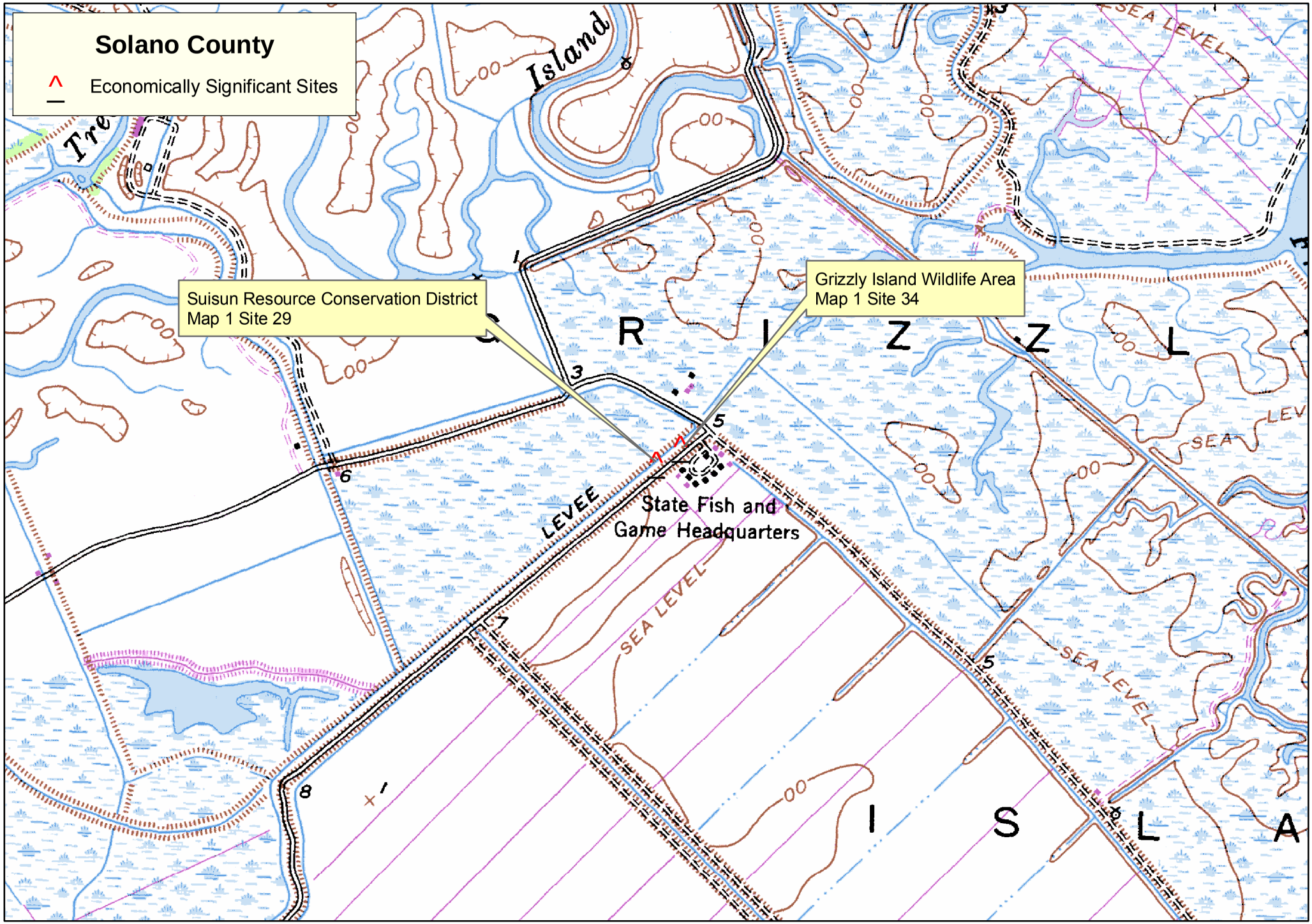
California Department of Fish and Game
Office of Spill Prevention and Response



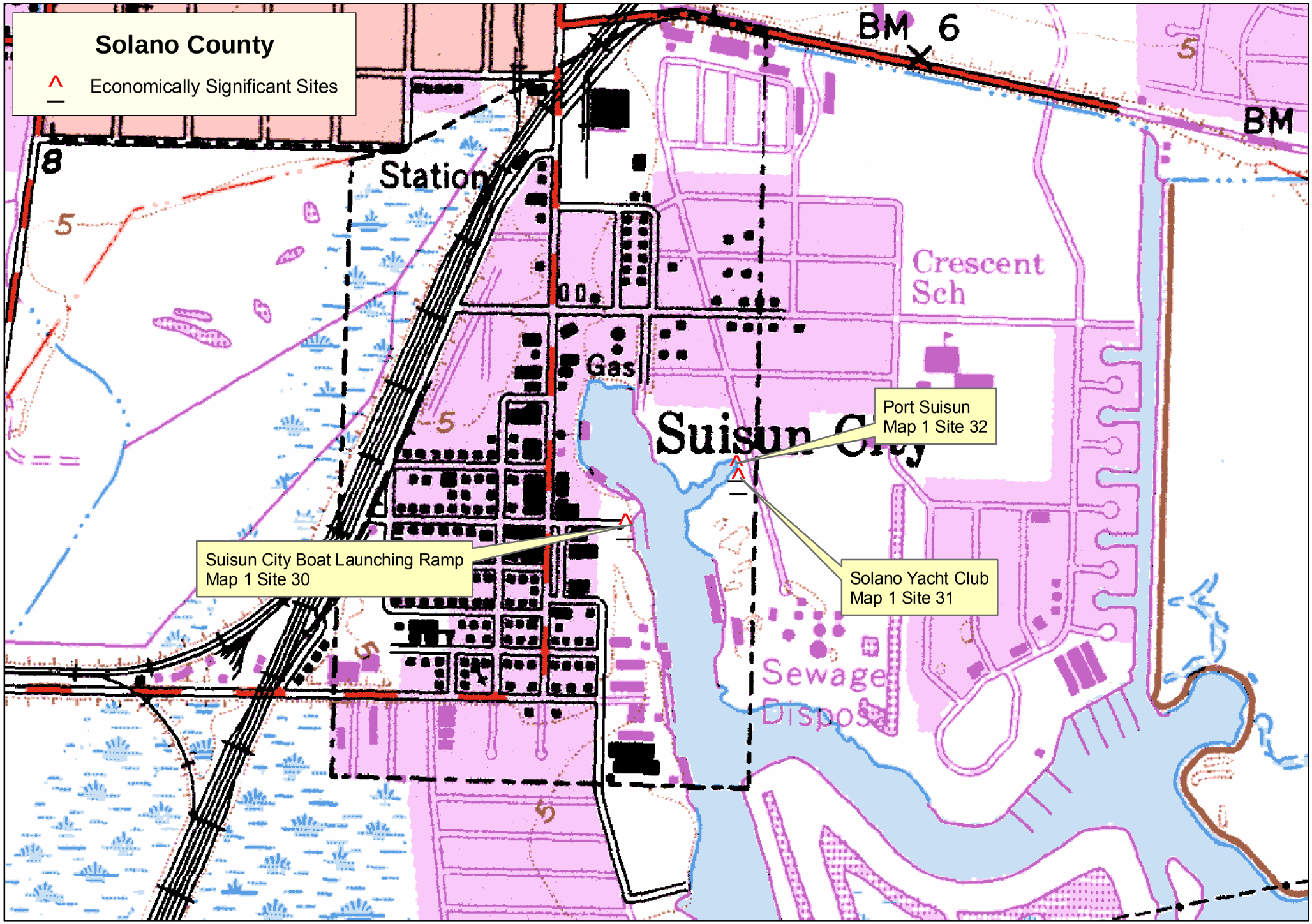
0 0.4 0.8 Miles

California Department of Fish and Game
Office of Spill Prevention and Response
Solano County Layout 004


Solano County
Economically Significant Sites
Joice Island Unit
Map 1 Site 33
Morrow Island
Distribution System
Map 1 Site 28
Goodyear Slough Outfall
Map 1 Site 27
0
0.5
1
1.5 Miles
California Department of Fish and Gam
Office of Spill Prevention and Respons
Solano County Layout 006

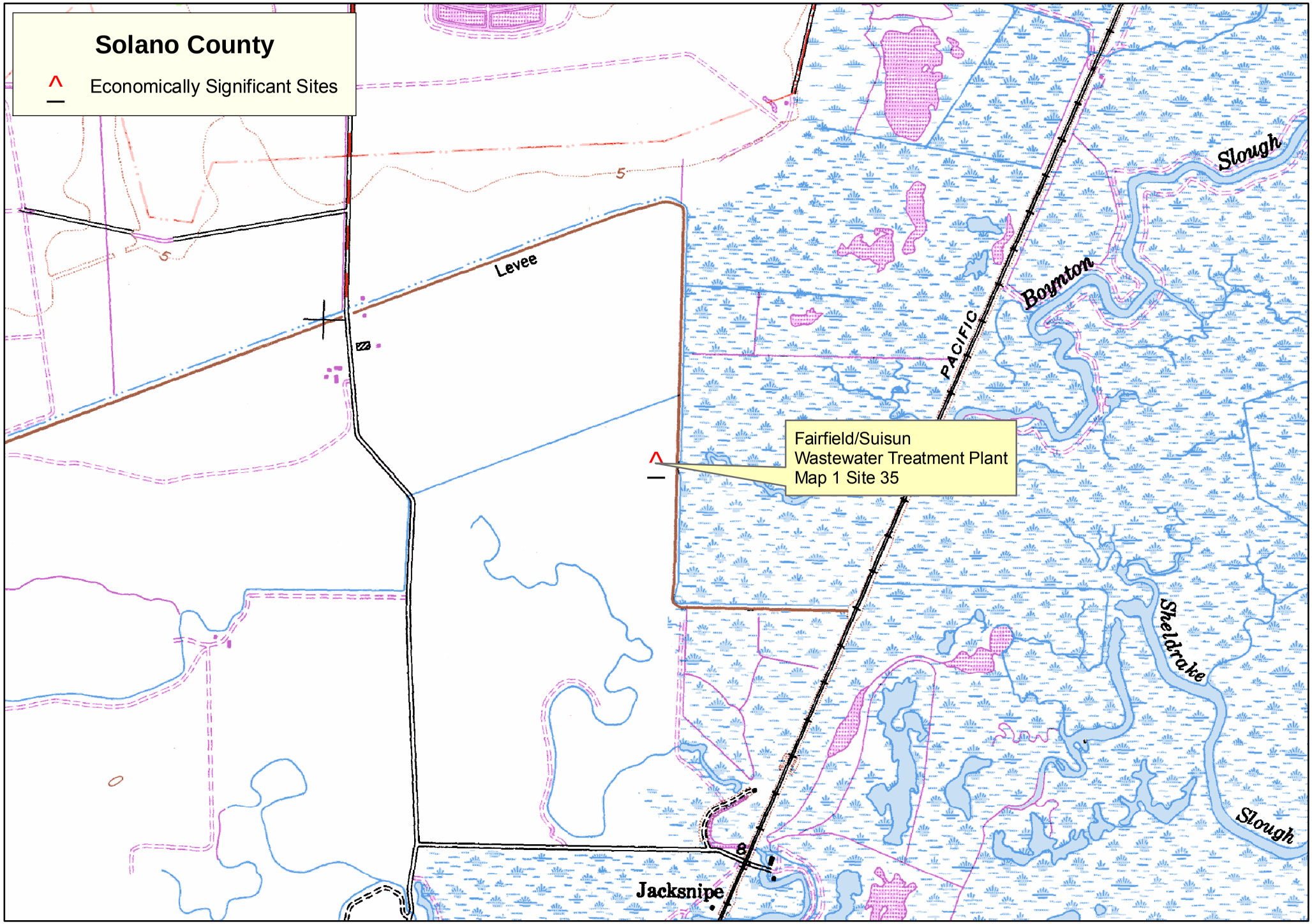


California Department of Fish and Game
Office of Spill Prevention and Response
Solano County Layout 008

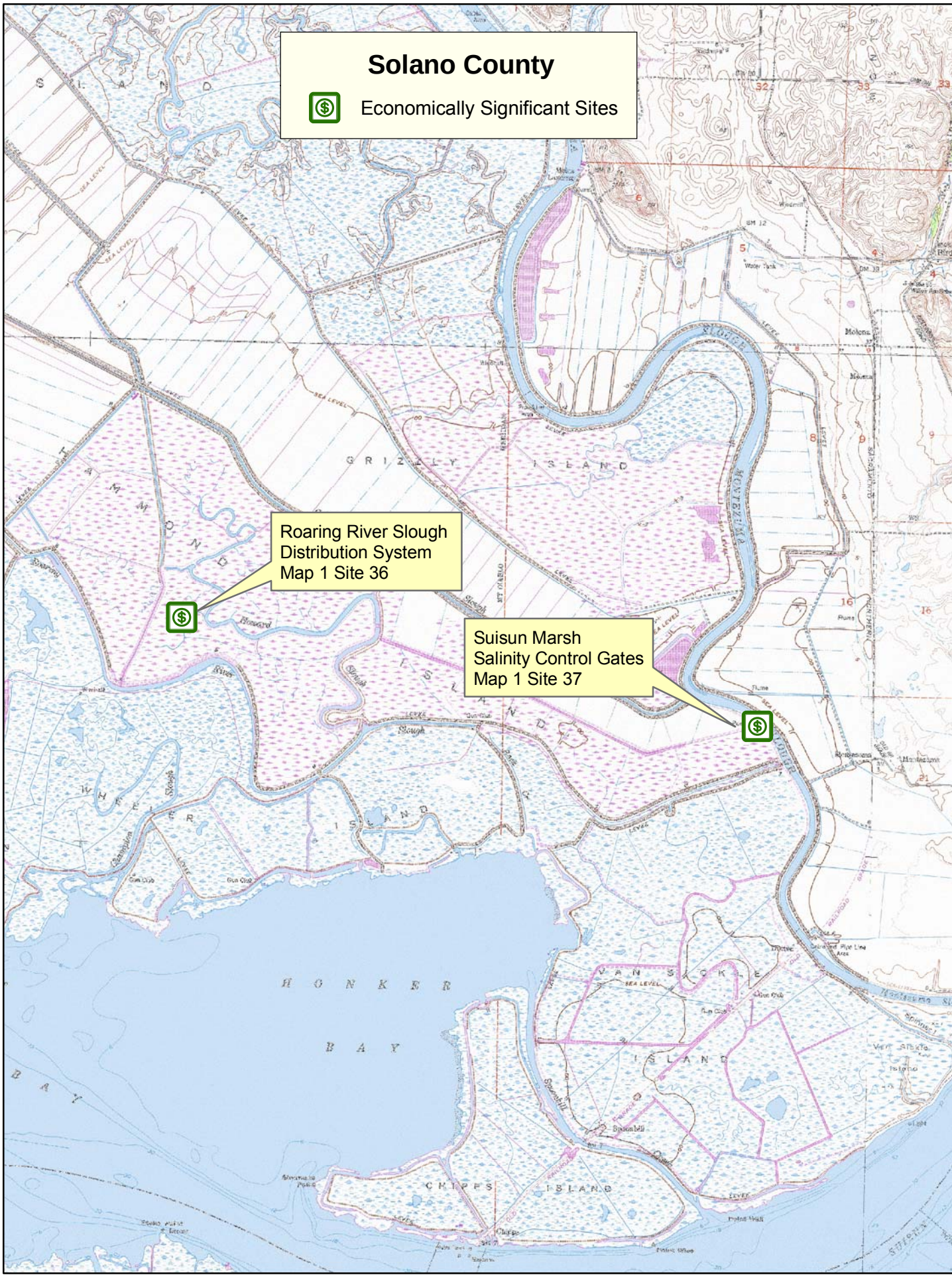


0 0.2 0.4 Miles

California Department of Fish and Game
Office of Spill Prevention and Response



California Department of Fish and Game
Office of Spill Prevention and Response
Solano County Layout 011



California Department of Fish and Gar
Office of Spill Prevention and Respons
Solano County Layout 012

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9846.4 Shoreline Operational Divisions

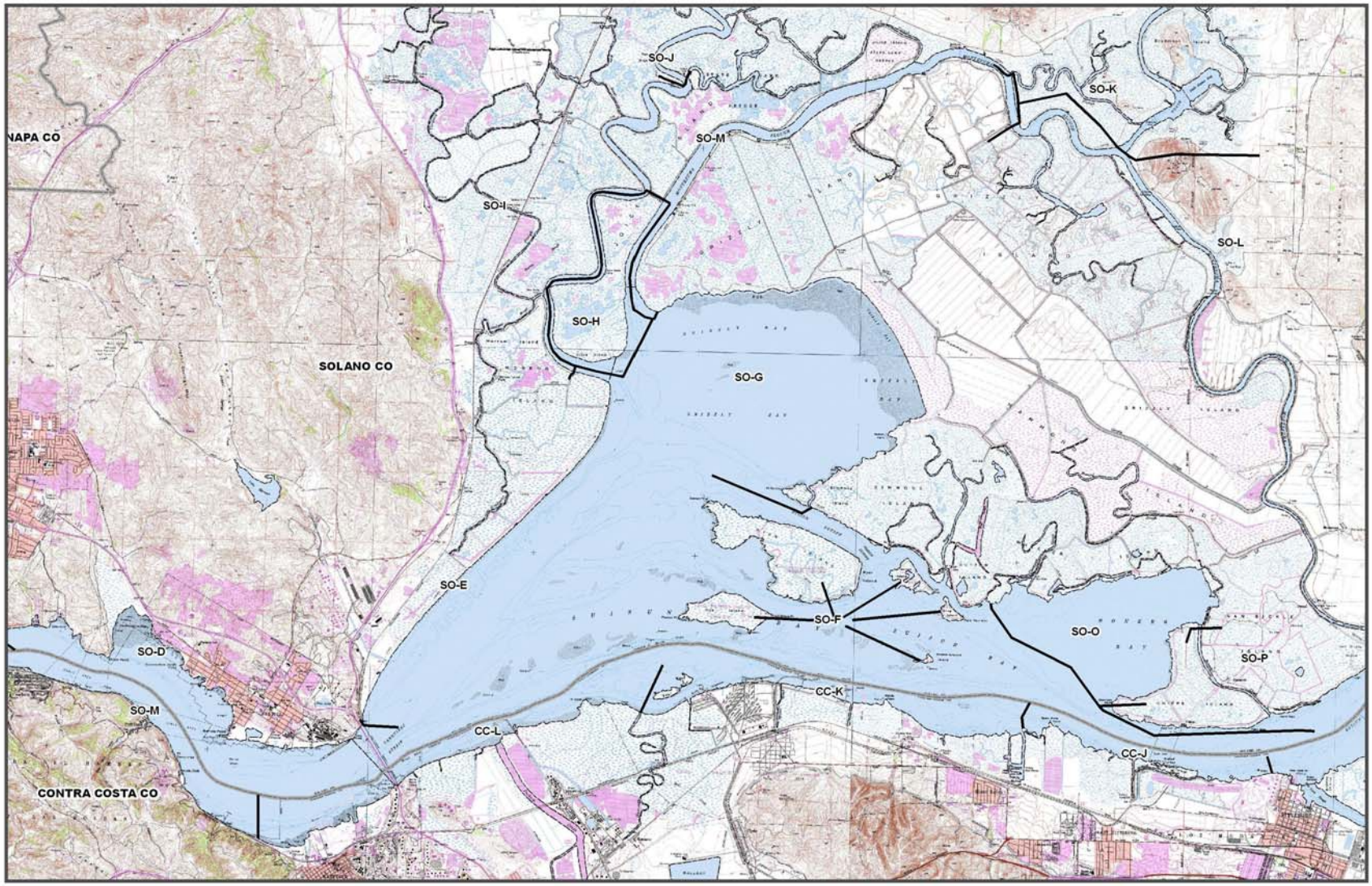
Shoreline Operational Divisions are presented in the ACP as front-loaded information to assist in rapid response planning to provide for quickly organized operational objectives and assignments along affected shorelines. The operational divisions have been developed in conjunction with the US Coast Guard, California Fish and Game OSPR, and various Oil Spill Response Organizations. Experience has demonstrated that in the earliest stages of spill response having organizational issues such as this prepared in advance is very useful to the response team.

The shoreline operational divisions are organized and named according to County boundaries. Within county domains, divisions are boundaries are guided by logical geo-political features such as coastal physical characteristics and land ownership/management issues, shoreline cleanup logistical considerations, and manageable sized coastline segments (generally not longer than about ten miles although some variation occurs.) Logistics, access, and manageability were driving considerations in this effort, particularly as it relates to types of cleanup operations required and problems likely to be present.

In ACP areas having more than one county, Shoreline Operational Divisions will utilize county codes followed by a single alpha character (A to Z). Shoreline operational divisions are labeled from north to south in each county. For example, the north-most operational division in Los Angles County is “LA-A.” In large bays (i.e. San Diego), the labeling will progress in a clockwise direction to accommodate changing coastline angles. Divisions can be easily subdivided (as necessary) by the Operations Section management to provide for appropriate work assignment effort.

Double digit alpha characters (AA to ZZ) will be used for all offshore operational areas and any other special operational areas needed during response.

GRA - 6 Shoreline Operational Divisions



Legend

Division Line

DRAFT

Source: C. Jochums

0 1.5 3 6

Miles